

American BEE JOURNAL

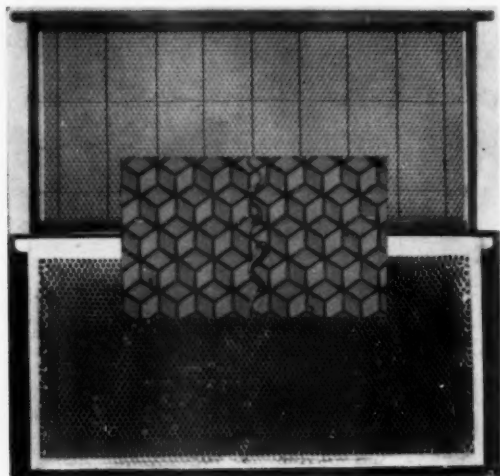


VOL. 92, NO. 3

MARCH, 1952

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THE AMERICAN BEE JOURNAL

HAMILTON, ILLINOIS

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COVER PICTURE

Ben Knutson, Alamosa, Colorado, produced this picture which fits well into the Round-up this month on pre-flow management. The brood pattern is solid, caps slightly raised. The queen is heavy, young, and well attended. Colonies so blessed usually come to flow time with a heavy field population. And that's what we want — for honey.

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Are We Big Enough to Do It?

by H. R. Swisher

The meeting of the American Beekeeping Federation in Dallas during January was well attended, with representation from most of our states. To me, two of the reports given were particularly interesting. First, the report of the tremendous job the American Honey Institute is doing towards building customer acceptance of honey with only a very small part of the financial support that it deserves. Second, the report of how the cherry growers, at one time in a position similar to ours, managed to secure the customer acceptance necessary to put their industry on a sound business basis. They did not do it by wishing and thinking; they did it by acting and doing. If they had price support it was not mentioned. Hands went into pockets and the wherewithal was obtained for the purpose of going out and promoting customer acceptance, and they got it. There is no reason why we honey producers can't do as well or better. We do have HONEY, the only natural sweet, yet we do not have the customer acceptance necessary to maintain a reasonable price for our honey.

One of the speakers compared our present situation in regard to competitors with the cave-man stage of social evolution and the present co-operative and mechanized age.

Whether we like it or not, we qualify for the cave-man stage in progress and promotion. How can our fumbling efforts expect to succeed in the face of the high-powered programs carried out of our food competitors? In the local food markets, honey is allotted about 16 inches of shelf space in a poor position. Molasses occupies about 12 feet of good, easy-to-find shelf space. Space is given to a product inferior to honey, but a product with customer acceptance which outsells honey. Just as soon as we can get customer acceptance of honey, the shelf space will be ours and old man price support will not be needed.

How can we do it? First, we will have to prime the pump with some enthusiasm. Not only Federation members, but beekeepers from Maine to California, from Oregon to Florida, up and down and back and forth over this United States of ours must help. If the cherry growers did the thing that could not be done, WE can get fired up and go out and burn down some of the obstacles in our way.

Enthusiasm will be put to the test when the term MONEY is used. When someone mentions money it's just like turning on the ice water. We all know we are not getting as much for our honey as we should and we are all in the same boat.

Let's get out of this unseaworthy boat; get a fair return for our effort, customer acceptance necessary to demand honey and a suitable stock of honey in every food market in the land. It can't be done in one day but we can help ourselves IF WE WILL DO IT. We need now a continued national effort with every beekeeper back of it. Easy to say? Yes, yet not nearly as hard to do as we think if every one of us helps.

The American Beekeeping Federation has a plan towards that end. This plan provides for each member beekeeper to contribute at the rate of 4c per colony when the total colonies he owns is more than the minimum membership fee. Members of state or other associations can qualify by contributing the 4c per colony in addition to their association membership. How could we contribute more easily?

In 1951, our industry operated some 5,572,000 colonies of bees. If every one of us had supported our national effort as we should, our Federation and Honey Institute would have had \$222,880.00 with which to work. What a wonderful piece of work they could have done! The largest beekeeping state would have contributed \$19,480.00, nearly as much as the national organization had to operate on the past year.

Ohio

New officers of the Federation: President Glenn Gibson, Minn., Oklahoma, and Vice President Clarence G. Langley, Red Wing, Minnesota. (Photo courtesy Clarence G. Langley)

W. C. Jensen, retiring president of the Federation, addresses the meeting at Dallas, Texas, in January. (Photo courtesy Erwin Glew)





PRE - FLOW ROUND-UP



Here it is. The third Round-up; this one on management in the period before the flow. Paddock sounds the warning—we must remember that it costs more today to operate than ever before. Every move must count. These men know what it is to carry on under such conditions and it is because they know that they stay in beekeeping. Most beekeepers are keeping bees to make some return. A few keep bees for the fun of it. Or are we wrong?

Anyway, whether you belong in one group or the other, honey is what you want. If you belong to the new and younger group of commercial pollinators, strong colonies are what you want. If you sit by your bees just to watch and relax, prosperous colonies are what you want. Read this Round-up with your own needs in mind and we think that all manner of beekeepers will find this discussion a rich store of good thinking.



Early Colony Management

by F. B. Paddock

Extension Apiarist
Iowa State College, Ames, Iowa

It seems everyone is agreed on one point—that costs are outrunning returns. Experience has shown that profits cannot be obtained by the simple procedure of expanding operations to increase poundage. This method has merely resulted in increased cost of production without a corresponding increase in returns.

There are several basic items which contribute to increased costs with no increase in returns. These are: pasturage, together with weather; costs, such as labor and supplies; and the selling price of honey. All of these items are beyond control of the producer, yet the entire worry of the producer is concentrated on

these items. Why would it not be better in every way for the producer to concentrate on the one item over which he has control?—that of colony management. I suppose the answer is too close to home and it is human to want to pin the blame on someone else.

What is meant by a colony man-

agement?—a term which has been almost forgotten in the last few years of struggle to expand operations. Years ago the statement was made that colony management consisted of "Better Stock, in Better Equipment, with Better Management." Of course all this means strict personal attention to fundamental principles which is not nearly as thrilling as waving the air with one's hands to get outside help to overcome shortcomings.

At this time of the year colony management must be concentrated on spring build-up. Spring management has been defined as "To build the overwintered colony or the package to maximum population by the start of the surplus honeyflow." An old saying that can profitably be recalled at this time — "Raise your bees for the honeyflow and not on the honeyflow." A profitable crop of honey cannot be gathered by a colony whose population is just entering the build-up stage at the time it should be at maximum population. It must be recognized that too many colonies come through the winter in such poor condition that the responsibility of spring build-up is much more than it should be. Spring management has been said to be "an opportunity for the beekeeper to cover up some of the deficiencies which had occurred in the fall and winter management."

Let us look at some of the specific problems of spring management. The overwintered colony comes into spring with 15,000 bees, or 3 pounds. This is quite comparable to a package. The colony must be built up to at least 60,000 bees and, better yet, 70,000, for profitable honey gathering. This means that 60,000 bees must be reared by the colony during the spring build-up period. Many fail to realize that the bees which have survived the winter will soon perish in the spring. Sixty thousand population represents 12 pounds of bees — not unreasonable for a colony to gather a profitable crop of honey. This means that the spring period — which beekeepers are complaining starts later each year — has, at best 6 or 7 weeks in which to accomplish population gains. This is slightly more time than is required for two cycles of brood.

The basis for this colony population is a queen which can lay eggs up to 1600 or 1800 every 24 hours without hesitation. Spring is the time when attention must be given to the queen. It is necessary to determine if her egg-laying rate is effective and, if not, the operator

must replace the queen from reserve supplies. It should be a regular practice to have new queens coming in from an early date on a regular weekly schedule. Whenever a queen is found to be performing below the average of the yard, a new queen should be given an opportunity to carry the load. Profitable production cannot be accomplished on alibis.

Stores are needed to rear bees and to maintain colony organization. It is said that 60 pounds of honey is required to rear 60,000 bees. This does not take into account the amount of honey needed for maintenance by the colony — for the incubation temperature of 94 degrees instead of the 57 degrees for maintenance during the winter. Experiments have shown that the heat requirement of the colony in the spring is actually more than the heat requirement during winter. This amount of stores is not all since the bees maintain a 15-pound reserve or "insurance policy." Whenever the stores reach this point, the bees begin to taper off their activities to fortify against disaster. Too many beekeepers are happy if the stores in a colony during the spring total 2 frames of honey which is only 10 pounds.

Then there are pollen requirements which are not fully appreciated. The pollen consumption of a colony during the year is estimated from 30 to 50 pounds — which is a lot of pollen. If this pollen is not enough, the bees will be forced to restrict their brood rearing activities.

Another item which is vital for the spring build-up is water, seldom considered by the operator. Water is necessary in brood rearing. Experiments conducted in Wisconsin indicate that average colonies will take a total of eight gallons of water supplied to the colony during the spring build-up period. There was no way of measuring the water which was brought in by the bees from natural sources.

If these stores are not in the hive, what are you going to do about it? Most operators leave that question to the bees. Yet operators are aware that spring weather is too often unfavorable for bee flight. Some effort has been made in supplying extra stores by substituting 50-50 sugar sirup. This is usually supplied after the bees have reduced their operations and have lost their stride, if not their morale for spring build-up. Demonstrations recently conducted indicate the definite advantage of feeding a thin sugar sirup. The extra

stimulating effect for brood rearing is easy to measure. This not only brings in a reserve of sugar but it also brings in water. If the weather is not favorable for collecting nectar it is not favorable for collecting water. If one is feeding considerable thin sirup, the water requirements will undoubtedly be supplied to a large extent.

It is difficult to provide for pollen requirements. Effort has been made to use pollen extenders or supplements and in some instances use pollen substitutes entirely. There is some question as to the value of this material for the rearing of long-lived bees. The value of pollen in spring brood rearing has recently been determined more fully. Pollen is recognized as a vital factor in producing good nurse bees and long-lived bees for nectar gathering.

Why is it necessary to give increasing attention to these spring requirements? Over a large area the natural sources of pollen and nectar have already disappeared but that condition is just now coming to be realized. This is another result of the modern, efficient, clean agriculture which is extending as more and more acres are put under cultivation. Plantings of farm woodlots have disappeared entirely. Native pastures which carried amounts of wild flowers, shrubs, and trees have now disappeared because the land is used for intertilled crops. Many areas are finding it difficult now to support colonies of bees for the spring build-up with the flora which is available and the weather which permits flight of the bees to gather the remaining resources. It is possible that beekeepers will be forced to move to spring build-up locations if they are not satisfied with the requirements of artificially supplying the needs of the colonies.

To provide for the rearing of the required number of bees and provide for the presence of enough stores, it is necessary to provide the colony with room. If all of the room were occupied at one time it would take about 30 frames to meet the requirements. Demonstrations have indicated the necessity of providing three 10-frame Langstroth hive bodies for colony build-up and the fourth story may be advisable. More operators are using a 2-story Modified Dadant hive to accomplish the same purpose.

Attention to the details of colony management is a solution or answer to the one problem which is under the control of the beekeeper.

The Spring Build-Up

by E. H. Adee



THIS year's honey crop can be what you desire or a very sad disappointment, depending upon the care and management you give your bees. Far too many beekeepers build their colonies up on the honeyflow rather than going to the necessary work and expense in building them up ready for the honeyflow. We are going to concern ourselves with the fundamentals necessary to build a colony that will be ready for the flow and get the crop in the hive (weather permitting).

In the fall, be sure you have enough honey in the hive so the colony will not starve during the winter. We figure on a minimum of 40-50 pounds per colony as winter stores. We always winter in two full-depth, ten-frame hive bodies which cannot possibly contain enough honey to build a powerhouse for the honeyflow, so for the past few years we have saved on the average 25 pounds of extra honey per colony and have found it to be the best investment we ever made. This consists of all our fall honey left in the comb and assembled ready to use in the supers at the rate of 20-30 pounds per super. As liquid honey we save all capping honey and all off-flavored honeys that are extracted. We have at least good average spring build-up territory but nearly all of this honey is consumed. We use honey for we have a better build-up on it and we consider it folly for a beekeeper to sell honey and buy sugar and then wonder why we have a surplus of honey on the market.

We feed our bees pollen substitutes consisting of soybean flour and brewer's yeast in outside feeders and would not use it any other way. It is the natural way for bees to bring in pollen and it really stimulates. If at any time on our early check we find a colony short on natural pollen we provide a frame of pollen. The pollen substitutes are provided for a period of 4 to 5 weeks before the supply of natural pollen takes care of their needs. If

for some reason a colony has to be fed when the weather is cold it is fed liquid honey in a 10-pound pail with the holes in the lid over the hole in the inner cover and the bucket inside an empty super for its protection.

If you find a colony with less than 15 pounds of honey at any time, "feed" even if the spring flow is on, for the weather may curtail the flow and a colony at that time of year, having a lot of brood, will soon consume a smaller amount and be forced to stop brood rearing, if not starve. Whenever brood rearing is curtailed for lack of feed in the spring your honey crop as far as that colony is concerned is cut to at least half. In all liquid honey fed we use sulfa as a preventive of disease, and at any time we move bees before the honeyflow to a location we are not sure of, we give each colony a preventive feed. Our percentage of disease is so small we do not consider it a factor, but never make a mistake and take anything for granted, eternal vigilance pays.

You will find with plenty of honey and pollen your bees will carry on through the so-called spring dwindle with very little loss of bees in the hive as so many young bees have replaced the old overwintered ones. This will enable a person to make up winter losses by nuclei if he so desires. In making nuclei, it is advisable to use nuc boxes. We prefer the five-frame size, as the queen can lay several frames of brood before transferring. In making nuclei do not make the mistake of taking too much brood and bees from one hive as the bees in the hive are necessary to keep heat for brood rearing. We make our nuclei about the 10th of April and we have some cold weather after that so we use brood and bees from two hives to make each nuclei, using a frame of emerging brood, plus a liberal supply of other bees from each hive. We want early nuclei or we cannot build them up to the strength we desire for the honeyflow. At that time of year we always secure our

queens from some commercial queen breeder.

We have quite a few honey locations that do not afford a spring build-up, so all the bees from these locations are moved to locations that can supply the bees with a spring flow. Unless you can supplement your feeding of pollen substitutes and honey with a good natural source of pollen and honey it will be a losing venture to try to supply the necessary feed to build up a strong colony. We always stay on our spring build-up locations until our outyards are ready for the honeyflow. This necessitates moving the bees in hives that have from two to four full-depth extracting supers above the brood chamber, but they are there only for room so are not too hard to handle and as soon as the bees are placed on location they are ready to store honey without any backtracking to put on supers.

The methods we use will build "power houses" and I suppose the question arises as to how to keep them from swarming. We never worry about that as it is taken care of in the management and because we have over 1,000 colonies for each outfit to take care of, very little time can be spent on each hive. We always make an early check for a good laying queen, pollen, honey, and disease and after that check only for honey until the hives have on the average six to eight frames containing brood, then instead of reversing supers we make one complete check. We move all brood from the upper super to the lower super and place all empty combs above the brood thereby giving the queen a chance to expand rapidly. This enables us to check on the laying ability of the queen, also

check for disease and remove any undesirable combs. If everything is satisfactory, that hive is not checked again but is given an extra super if heavy with bees and if not quite ready marked for a super next run. From there on it is just a question of giving plenty of supers, but get them on. With a good hive, all the supers should be on at least two

weeks before the honeyflow.

Do not be afraid of getting a hive too strong. That kind of talk in my opinion is just an alibi for not having one's colonies ready. Bees do not reach a peak and then go down. If she has plenty of food, a good queen will reach a high level of brood production and then maintain that level from a month or

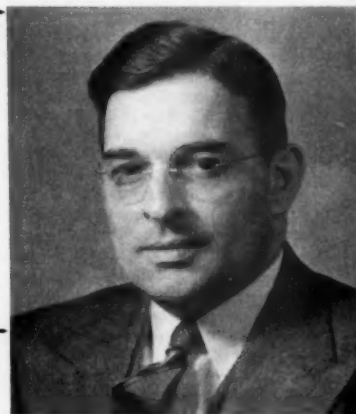
more before the honeyflow until after the honeyflow is well on its way. If you question this, measure the number of square inches of brood in ten or more hives in different yards every three weeks from early spring until after the honeyflow is on. It will show how wrong you are.

—Nebraska

Uninterrupted Brood Rearing

by W. E. Dunham*

Reprinted from *Ohio Farm and Home Research*, March-April, 1951, Vol. 36, No. 269, under the title: *Pollen Substitute Builds Stronger Bee Colonies.*



UNINTERRUPTED brood rearing activities by honey bees throughout the spring period are essential if colonies are to become strong enough for profitable honey production and the pollination of crops. Abundant supplies of pollen, the source of protein, mineral and vitamin requirements, must be available throughout this period or the breeding of colonies will be seriously retarded. Weather conditions that may actually freeze the early plant pollen sources, and low temperatures or rain that prevent bees from gathering sufficient pol-

len supplies have been problems for years among beekeepers.

Research work by the Federal Bee Culture Laboratory and the Minnesota Agricultural Experiment Station has resulted in formulas for a "pollen supplement" and a "pollen substitute" respectively.† Consequently it is possible to feed colonies of bees so they will continue to develop rapidly during periods when natural pollens are scarce.

During the past six years, in cooperation with a commercial beekeeper, studies were conducted on the preparation of over 10,000 pounds of a pollen substitute and on the behavior of colonies of bees in the

consumption of this food. Key points in encouraging greater consumption by colonies and thus more intense breeding activities that have been developed as a result of the study are: a heavier sugar content, the proper consistency of the dough and the proper position of the pollen material in the hive. The two latter points have been stressed by previous workers but many beekeepers have not realized their importance.

Greater Sugar Content in Pollen Substitute Advantageous

This pollen substitute consists of 4 pounds of soybean flour plus 1 pound of brewers' yeast mixed with a thick sugar syrup. In preparing the sugar syrup to mix with the soybean flour and brewers' yeast commonly used in these substitutes, the proportions generally recommended are 1 part of sugar to 1 part of water or 2 parts of sugar to 1 part of water. The richer concen-

*Professor, Department of Zoology and Entomology, Ohio State University, Columbus, Ohio.

†Persons unfamiliar with these standard methods may obtain detailed instructions by writing The Federal Bee Culture Laboratory, Beltsville, Md., and the Minnesota Agricultural Experiment Station, St. Paul, Minn.

The substitute pollen is placed on the frame near the center of the bee cluster.



tration of sugar is preferable. It has been found that using 2¼ to 2½ parts of sugar to 1 part of water gives even better results in making a pollen substitute for bees. Boiling water should be used to make the super saturated sugar solution but should some granules of undissolved sugar be present, they do no harm.

Reduces Spoilage

Using a super saturated sugar solution in the soybean flour-yeast mix practically eliminates mold growth and fermentation that is likely to occur during damp warm weather. The higher sugar content of the food results in more ravenous consumption by the bees. Thus the protein intake is stepped up with a corresponding rise in the level of brood rearing in colonies. In the low sugar pollen mix, bees often refuse to eat it during periods when natural pollen is available, thus loss of the expensive pollen mix occurs. This is not the case with the high sugar pollen mixture.

Correct Consistency Important

After adding the correct amount of soybean flour and brewers' yeast to the sugar solution, it should be thoroughly stirred until a uniform

dough-like mix occurs. The consistency of the dough is highly important from the standpoint of its attractiveness to the bees. The dough should be as moist as possible and yet firm enough that when placed over frames of the hive it will not run down between the frames and daub the bees. A stiff dough mix is not as attractive to the bees and tends to dry out as time elapses. Always allow the pollen substitute mixture to stand 7 to 8 hours as frequently the dough stiffens. Just before placing it on the frames of the hives correct the consistency of the dough mix by adding enough heavy sugar syrup to restore it to the proper condition.

Placement of Pollen Substitute on Colonies

Poor results with the use of a pollen substitute during the early spring period is often traceable to the improper placement of the material on the hive. At this time of year, the population of colonies is at a low level and the bees do not spread over the combs as freely as later in the season. This is due largely to prevailing cool outside temperatures and as a result the bees are in a fairly compact cluster.

The standard method for wintering bees in Ohio is in a two-story hive or, in some instances, in a one and one-half story hive. In either type of housing the cluster of bees in the spring should occupy both hive bodies or at least partially so. The pollen substitute mixture should be placed as nearly as possible within the cluster. This means putting it on top of the frames of the lower hive body. In early spring, never place the pollen substitute on top of frames if the bees are clustered three or more inches from it. If possible, always place it on top of the frames occupied by the central position of the bee cluster. This position of the pollen material will ensure rapid and continuous consumption of the food.

Size of Feeding

The amount of pollen substitute to be given is governed by the size of the colony and the amount of brood present. A single feeding for a colony of bees covering only 3 to 4 frames is about one pound. Strong colonies covering seven frames or more may be given 1½ to 2 pounds at a feeding. Colonies should be checked every 7 to 8 days and pollen food supplied as needed.



How to Build Up with Packages

by Henry W. Hansen

package bees for the last 17 years, and am still learning new tricks about them.

With proper management it is possible to make as big a crop with package bees as with wintered colonies, and there is the added advantage of storing equipment in the winter which helps on depreciation.

The preparation for package bees starts the previous fall. After we finish our extracting we sort our brood nests. We like to have about a frame and a half of honey and two frames of pollen, plus a feeder and four empty combs, arranged in the following manner: 1 comb of honey on the outside, next a pollen comb, then 4 empty combs, one

more pollen comb, and another honey comb, and last, the feeder.

That accomplished, we lock up the place and go to the National Convention. We don't have a thing to do until it is time to go after package bees—except repair equipment which can keep a fellow reasonably busy all winter.

The first of April I take the truck and head for southern Louisiana for my first load of packages. I haul 880 2-lb. packages on a load. To haul that many we had to elevate the truck sides to a height of 10'6" from the ground on the 14' bed. We made ventilators in the front of the truck body and lined the sides with pressed wood. The back is open,

THE old question of package bees vs. wintered colonies is always good for a discussion. It is not the purpose of this article to discuss the merit of one over the other. Package bees are an altogether different form of beekeeping than wintered colonies. I have had

that is, no pressed wood is placed over the endgates. This enables an air current to pass from the front through to the back.

With plenty of help we load the bees in about an hour. When the bees are prepared for shipment, laths are nailed across the top and bottom of 5 packages with about 5 inches between each package so they don't crowd together in shipment. The laths are cut so they will load to advantage in my truck. They are loaded just before dark to prevent overheating the bees if it happens to be a really warm day. We have a canvas over the top of the truck and also one that we can lower across the back when necessary.

When the bees are loaded we start on our 1,050 mile journey. As we go north we begin closing the ventilators, and by the time we get up in the mountains all of them are closed. It is about 2 A. M. when we get into Arkansas. The next day when we get into Missouri we generally have to lower the canvas behind the bees in order to keep them warm. This, of course, depends on the weather at this time of year.

You can easily tell by the sound of the bees whether they are too cold or too hot. The bees have a very low hum when they are satisfied, but it is awfully easy to chill them. When the low hum stops, watch out; they are getting chilled. When they get hot you can smell them and the hum becomes high pitched. We generally get them up north with perhaps a total of a pound or two dead bees which in so many packages is absolutely no loss. I have seen more dead bees in 10 packages shipped by rail than in a whole load of 880 shipped by truck.

When we arrive at Dakota City, Iowa, we unload and spread out the packages in the honey house, spraying them with a thin sugar sirup. They still have feed in the feed cans, but spraying seems to quiet them. Don't feed them too much. We don't feed heavily until we are ready to install them; then we feed just as many as we plan to install at that particular time.

While I am on the trip south, the boys put out the hives which were prepared the previous fall. These are placed in the yard so they are ready for receiving the bees. The 1" entrance reducers are plugged to prevent robbing before the bees are installed. If it is chilly when we take the bees from the honey house,

we cover them with a canvas. We also take with us one empty super for each three packages of bees.

When we install the bees we remove from the brood nest two empty frames and one frame of pollen, plus the feeder. The feeder is placed on the ground by the hive and the three frames are placed in the empty super, which has room to accommodate the frames removed from three brood nests. We remove these three frames and the feeder from all the brood nests and push the one comb of honey over against the two remaining frames left in the brood nest before we start installing the bees so that they can be installed swiftly without chilling. (Bear in mind this is about the 10th of April. The second load is installed about the 22nd and by that time we don't have quite as much trouble keeping the bees warm.)

The brood nest arrangement now is:

- 1 honey frame on the outside
- 1 pollen comb
- 2 empty combs
- 1 honey comb next to empty space.

The first step is to remove the laths and then set the package down inside the hive in the empty space. The inner cover is replaced. When all the packages have been removed from the lath crating and placed inside the hives we are ready for the actual installation.

One man goes ahead and jars the bees to the bottom of the package. He then removes the cover over the feed can and takes out the feed can and the queen cage, replacing the wood cover immediately. The queen cage is placed on top of the wooden cover and the feed can set outside the hive.

I follow and check the queen cage to see if the queen is okay, remove the metal covering over the candy hole, stick a nail through the candy, place the queen cage between the empty frames, **candy side up**, and shake about a double handful of bees on top of the frames. The shipping case is left in the empty space with the wooden cover removed so that the remaining bees can get out. The third person replaces the inner cover and lid. The inner cover goes on upside down so as not to crush too many bees. Using this method we can install about 40 colonies in approximately one hour.

The small entrances remain plugged until just after dark that evening, so that the bees can get settled in the hives before they start flying. In this way drifting is prevented. Even if the weather is

warm, do not be afraid that the bees will overheat. I have sometimes forgotten to release the bees in one hive and a week later the bees were still very much alive; however, this is NOT recommended!

If at the time of installation the weather is warm so that the bees will fly readily, we put our packages on the ground outside the hive, and with a sprinkling can wet them well with water so that when we take out the feed can and queen cage we don't have so many bees in the air. This also cools them.

Not less than a week after installation the empty packages are removed, the frames and feeder are replaced, and the one comb of honey is put on the outside next to the feeder. We look for the queen. We have extra queens with us and give one to any queenless hives that have enough bees to warrant requeening. If not, we double them up with a queen-right colony by uniting with newspaper.

If we still find some queenless colonies at the next inspection another week later, they are doubled up with queen-right colonies. We also give them a feeder of honey diluted with water, about half and half, with sulfa added to take care of any disease which might be picked up in the spring.

After they have been installed five weeks we equalize brood. If we can average five frames of brood per colony in a yard we are happy. Some have six and some have four. We take one frame from those which have six and give it to those with four to make the colonies as uniform as possible. At that time we have some supersedure and try to keep some queens on hand for replacements, destroying all queen cells present. When we have an average of six frames of brood in each hive body we put on a second super if the weather is warm. Do not be afraid to crowd your bees in the first super if the weather is not warm. You can give them a setback by giving them too much room when the weather is not right.

About the time the flow starts, June 10 or 15, we have anywhere from 10 to 14 frames of brood in each hive.

For the last five years our costs have been running from \$15.78 per colony (1947) to \$12.81 (1951). This includes my salary at \$4,800 a year, price of package bees, labor, taxes and every other expense connected with operation of bees.

—Iowa

What About Pre-Pollination Management?

by Milton H. Stricker

THE month of March finds most of those beekeepers who supply bees for pollination with a worried look. Will their colonies be at sufficient strength for early spring pollination? Or will they be too weak to do an efficient job for the farmer and after the job, will they be able to build up to produce a crop of honey or to be moved to other crops for further pollination chores?

If the fall flow was good and colonies were headed by young queens of a vigorous stock, some of those worry wrinkles can disappear. The beekeeper's main worry from now on will be the early spring weather; whether the maples will bloom in favorable weather and if there will be enough flying weather to allow bees the usual impetus of skunk cabbage and pussy willow nectar and pollen.

If all things are right, colonies in this section will average six full

frames of brood when the pollination work begins. If we help matters, there may be an even greater average. The more frames of brood, the better our pollination service to our customers and the greater our chances of producing a crop of honey after bees are moved away from their pollination chore.

To help bring about the optimum, we see that each colony is headed by a young queen in autumn. We never remove the summer honey crop until we are sure the fall flow is going to materialize. This is a simple procedure but it pays dividends. If the summer crop is not removed and there is no fall flow, it is so much more convenient to have the honey right there where it is needed than to have to haul the stuff back to the hives or get out those messy feeder pails. Also, the colonies can winter better with well-ripened summer honey and those many cells of pollen that they are sure to need for early brood rearing.

Colonies that aren't up to par for the fall flow are united—not two weaks to make a strong, but the weaker one under a stronger one, allowing the better queen to survive. We find it is easier to make increase from strong colonies in the spring than to try to repair the toll winter takes of stock that shouldn't have been propagated in the first place.

The same operation is done again after the fall flow. Taking one's winter loss in the fall, someone has so aptly called it.

Even in spite of these precautions there are some years, especially after a nectarless autumn such as '51, that clusters are not just what they should be. Colonies are checked in the first warm days of February and if the cluster is too small, escape boards of Fuller candy are applied to the smaller colonies. It is difficult to explain just the size a cluster of bees should be. It is an instinct that the successful acquire and no amount of explaining



will ever teach the uninitiated.

The application of this candy will stimulate brood rearing causing an earlier build-up. This practice should only be resorted to if there is plenty of stores, otherwise the colony will breed itself to starvation. In this climate, forcing works well. Perhaps in other areas it would be disadvantageous, but here in New Jersey it is a successful practice.

In three weeks' time these colonies are checked and more candy is applied if thought necessary.

Occasionally a yard will be found where the cluster has not utilized the candy or increased the already too small cluster. This is the handwriting on the wall of spring dwindling and we proceed with a simple but efficient practice.

The first day the temperature is above freezing, the colonies are picked up and moved to another yard. In pollination work this is not so inconvenient as it would be in honey production, since the colonies are moved closer to their coming pollination chore, a decided convenience when the rush of spring work begins. Best of all, this moving always seems to stimulate brood rearing and defeats spring dwindling, a bugaboo of beekeeping in New Jersey. This same procedure can be used to cure bad cases of dysentery. When the bees are ready to move to peach, apple, and blueberry loca-



Above: "White sand and pine trees"—a typical South Jersey yard.

Below: The truck loaded and ready to roll to early pollination work.



tions, they are inspected for disease and the normal colonies moved away. If any weak sisters are found, they are allowed to remain in the yard to build up. Later they will be split for increase and new queens of our own stock will replace the old queens and be added to the resulting "nuca."

Perhaps this tirade on management of bees for pollination has not seemed apropos for the honey producer, but if I were to depend on honey production, I would use the same methods. Getting the "most-est of the bestest" is just a matter of applying those rules that experience has taught.

Perhaps, also, I seemed to have stressed the fall management rather than spring management, but twenty years of beekeeping in this state has taught that the best time to get bees ready for the spring or summer work, be it honey getting or pollination, is in the autumn previous.



Pre - Flow Management for Comb Honey

by Carl E. and Eugene Killion



THOSE who expect to produce comb honey exclusively must make every effort to have all colonies in the very best condition. Whether producing comb honey or extracted honey, the beekeeper should remember that his colonies should be strongest in field bees at the start of the expected honeyflow. It is better to have the workers reach their maximum number a few days after the flow is under way than to reach this stage too early, as in the latter case the bees will start loafing.

Our method is to winter all colonies in double brood chambers and for each colony to have a minimum of 70 pounds of honey in the late fall. Any colony containing less than this amount is either given frames of honey or is fed sugar sirup, our preference being frames of honey as most of these will contain some pollen. Our bees do not gather enough pollen in the fall flow for use the following spring, so it is often necessary to feed pollen supplements to many of our colonies early in the spring.

About one-half of our colonies are packed in light collapsible cases, each holding two colonies. The remaining colonies are arranged in pairs and wrapped with waterproof

paper, such as is advertised in the bee magazines. The wrapped colonies do not winter quite as well as those in cases.

The winter wrapping or packing is removed in late March or early April, depending entirely upon weather conditions. As fast as the wrappers are removed, each hive is checked for strength and stores but only those hives which appear light in handling or weak looking at the entrance are opened at this time. Quite often a big, strong colony may not show much activity at the entrance and yet have an excellent cluster. We follow the apiary inspectors' instinct and examine all dead colonies first; the weakest, next; and the average looking ones, last. If any frames of honey are found in the dead or weak colonies, they are taken out and given on top of stronger colonies which are in need of food.

In most cases of weak colonies, the bees occupy only one hive body and we have found it to be a good practice to unite some of these, especially if one of the queens is below normal. After uniting, we have two extra hive bodies which we take into the shop, where they are cleaned of burr comb and propolis and imperfect combs replaced with

more perfect ones before they are again used in the apiary. The painting of the hive bodies and other necessary repairs can also be done at this time.

After the unpacking, the uniting of weak colonies, and the feeding of light ones is finished, very little apiary work is required until fruit and dandelion blossoms appear. As soon as the latter start blooming we begin the clipping of queens, the date of clipping being recorded in our apiary record book. It would be impossible to run outapiaries for comb honey without clipping the queen's wing. During this clipping period the general condition of each colony is noted and wherever needed additional uniting and feeding is done at this time, as our first round was more of an emergency measure. Weather conditions are rather uncertain at this time of the year and many times our clipping operation is delayed several days before it is completed.

We depend upon the dandelion for nectar, pollen, and the natural build-up period for an adequate force of young worker bees with which to gather the crop. In favorable years some colonies will store a surplus of dandelion honey above their imme-

date brood-rearing need, but if weather conditions prevent bees from getting a fair amount from dandelion, they must be fed sugar sirup and considerably more pollen supplement. The first and second week of April will find us starting to feed supplements, but it should be stated that we delay our supplement feeding later than many who feed supplements. If we wished to feed for starting our own packages, it would be done earlier. Occasionally we find a colony which needs pollen earlier than the others and in such cases this individual colony is fed.

If the bees have the opportunity to work the dandelion and fruit blossoms to any extent, we start reversing the position of the two hive bodies on most of the colonies, reversing them as often as is necessary so that the queen may have nearly identical conditions in both bodies. The extra strong colonies may need a third body in which to expand, and there are a few exceptions when four hive bodies are needed.

As this early flow starts to taper off, we are faced with one of our annual problems: How long must we continue to feed and reverse hive bodies before the clover flow starts? Over a 35-year period, the beginning of our flows has varied from May 16 to June 23. These dates are the two extremes, the average being about June 7.



Good breeding stock plus proper management produces crops of comb honey like this.

The feeding of both sirup and supplements must continue until the flow gets under way. We, like all beekeepers, have lost a few colonies by starvation, in most cases the flow of nectar being only two or three days away. It is important to watch the stores in each colony right up to the time the flow starts, this being especially true of the extra strong ones.

The two hive bodies are fairly jammed with fresh nectar before we reduce the colony to a single hive body and give it the first comb honey super. Waiting for this abundance of nectar eliminates any

feeding of the increase we make with the extra hive body. The frequent reversing of hive bodies previous to the reducing or "cutting down," gives almost the same brood pattern in each body, therefore, either one may be left for the comb producing colony. Most of the bees in the body of combs taken away are shaken in front of the hive body left on the parent stand. The body of brood taken away, which now has only enough bees to care for the brood, may be used to help a weak colony or it may be used to start increase, adding to it until the increase is at least three or four bodies high.

An Ever-Ready Source of Queens

by Lee R. Stewart

FOR years we have operated from 10 to 20% as many nuclei as we have regular colonies. Each yard has its quota. Because of their many uses, we find nuclei not only very fascinating but also the most important item in our beekeeping practices. Although the two principal

uses of the nuc are to provide a good, ever-ready, tested, young queen and to make up our winter loss, they are also excellent for furnishing brood for weak colonies, for drawing foundation, for storing feed and as a storage for poor combs.

We have tried various types of





Nuc, placed above strong colony for winter and provided with its own entrance.



Nuc before uniting. The nuc was started and "grew up" during summer. Note leak-proof feeder made with bored holes in a two by six.

nucs but find the little hive that holds five standard Hoffman frames or four frames and a feeder, the best for our type of beekeeping. The side spacing is a little wider to allow early, quiet manipulation and the bottom a little deeper to accommodate any good queen cells that might be drawn on the bottom of a frame. The bottom board is nailed on and it has a screened hole in one end for ventilation, bottom ventilation being more private. The feeder is drilled out of a 2x6 or 2x8 and hangs in the hive like a frame. It will last a

long time and never leak. The nuc's life begins from April on and ends the following March or April.

Of course our spring nucleus is in reality a last year's nuc in its last stage of existence — that of replacing our winter loss. After performing the duties of a work horse the year before, it was transferred from its little home into a regular hive body — the empty space being filled out with combs of honey, pollen or just good black combs if the nuc had enough stores of its own. It was then placed over a strong two-story colony with an inner cover between. This cover has an extra rim added and the escape hole screened top and bottom. A one-bee entrance is provided on the side that allows the most sunshine. The empty nuc box is filled with combs or foundation and set aside for another season.

In early spring we check our nuc for stores. Pollen is no worry in our country; often it is a headache. We don't remove the nuc from the mother colony until all danger of freezing is over and it is strong enough to protect its brood. At such a time we set it off on a stand of its own. The fact that it now has an end entrance in place of one on the side minimizes any tendency to drift back to the old location. A frame or two of sealed or emerging brood from some strong colony will be a big boost to your erstwhile nuc, which if properly handled will produce as much honey as any colony in the yard and sometimes more.

The build-up season covers nucs of two seasons — the last stage of last year's nucs and the first of this year's. The overwintered nuc is just another colony when we set it off on a stand of its own. It is now time to establish a new crop of nucs. Our little hives are distributed to each yard. By May or earlier, many of our colonies will be very strong and some may start queen cells. If these cells are sealed and from good stock and on frames of sealed brood, which they usually are, the frame with adhering bees is traded for an empty frame in our nuc box, taking care the queen is not on the frame. If the frame does not have enough bees on it, we shake in some more. The empty frame is put in at the side of the colony from which we took the frame with queen cells as it is unwise to break up a brood nest. Fill the feeder in the nuc (you can give a frame of honey but it is not as good) and stop the contracted entrance with some grass. By the

time the bees get the grass cut they will stay put. In a few days you will have a young queen at your elbow for any emergency.

If one yard by chance produces more nucs than needed, we distribute them to yards not so fortunate, the idea being to have good young queens always available. When a queen is introduced to another colony, we usually use the match box tray as she will be out in a few hours and laying, which is good for the queen and good for the colony. If we want to establish nucs before queen cells are available, we make them up from surplus bees and give queens from the South. When a queen is removed from a nuc, the nuc is given another queen cell — natural or grafted — or a queen from the South, or left to rear one of its own. During the swarming season, we usually have a nursery full of virgins we can use.

In addition to its use as a queen-rearing hive and a replacement for winter loss, the nuc furnishes an ideal storage for inferior combs that are culled throughout the season. If the poor comb contains brood or honey, it is traded for an empty or preferably one of brood from a nuc. If the poor comb is dry, it is taken to the shop for salvage, an empty being put in its place.

Nucs are also used to store feed for colonies that are short of stores. Feed them heavily and when a frame is full, trade it for an empty in a needy colony. If a flow is on, you will have to add honey to your sirup to get the bees to take it. When not needed, the feeder is replaced with drawn comb or foundation. The nuc is ideal to draw foundation. Of course, you will need a vigorous queen and heavy feeding. We draw upon our nucs for frames of sealed or emerging brood to strengthen weak colonies; often a frame or two of extra bees will mean the difference between a crop or just a colony of bees. At the beginning of the honeyflow we also strengthen weak colonies by uniting an entire nuc to them. A nuc started in August or September will develop into a replacement for winter loss. Often nucs are so strong at the beginning of the honeyflow that they are transferred into regular equipment and operated for honey production. Such colonies are ideal for the stacking of combs of brood and honey taken from colonies operated for comb honey.

Indiana



G. L. Hankamer, Belleville, Ill., one of the enthusiasts for whom beekeeping will always be an exciting occupation, sends this picture of one of his colonies in the honeyflow last year. He says: "We had our bees strong and the picture will tell you more than I could write." He uses two bodies, with a capacity like the Modified Dadant, and shallow supers for honey.



Dick Whittington, Mount Ida, Arkansas, rigged up this three-ladder arrangement, to assume to hive a swarm; maybe to get a colony out of the tree with some flight exits. It would do for either and it is so comfortable to use. The step ladder and the single ladder with board platform are entirely adjustable. The third ladder is the "stairway" for the beekeeper.



John G. Jessup (left), President of the Iowa State Beekeepers' Association, presents E. G. Brown (right), of Sargeants Bluff, Iowa, a Merit Award for outstanding achievement in the field of Iowa Beekeeping. The presentation was made November 15 at the fall meeting of the Iowa State Beekeepers' Association. Mr. Brown is a prominent leader in beekeeping and marketing. For many years he has been active in Iowa organization efforts. He is also active in national and regional organization work. He and his sons have one of the largest commercial honey producing outfits in the state.



Speaking of honors, here President Gilbert Mipke of the Wisconsin State Horticultural Society (center) presents honorary recognition certificates to Henry J. Rahmlow, secretary (left), and Ernest Leslie Chambers, State Entomologist and Society Treasurer (right), at the annual convention banquet in Fond du Lac, November 27. Rahmlow is not only secretary but also editor of "Wisconsin Horticulture," the official publication of the Society. He is a skilled horticulturist and also a skilled beekeeper. Now he carries on his multitude of duties and still has a good sized honey production outfit is a mystery. But he does it.



"Just after the capture of Augusta, Sicily, in 1944, I came across this remarkable apiary, the entire back of a peasant cottage built up with tiers of rectangular hives, 240 in all. They are owned by a merchant in the nearby town of Syracuse. Once a year he came with tubs. He pulled off the front of each hive, scraped out the comb from the front part, leaving only the back. A wet mixture of dung and mud was used to cement the front back in place. Back in Syracuse he 'processed' the honey which might amount to several tons. The hives were then left alone until time to remove the crop the following year." G. F. Dixon, Commander Royal Navy (retired), England

The Importance of Package Bees and Problems Affecting Their Successful Use

by C. L. Farrar

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Agr. Res. Adm., U.S.D.A.



The importance of package bees in North American beekeeping is indicated by the volume of packages and queens shipped annually from the Gulf States and California. Statistical data available for the period 1944-1950 (Table 1) probably reflect the economic trends in beekeeping more strongly than does the beekeepers' attitude toward the value of package bees.

Central States Bee Culture Laboratory of the Bureau of Entomology and Plant Quarantine for testing differences in behavior and productivity of stock lines.

The net yields of honey obtained from package colonies headed by both commercial and controlled hybrid queens are shown in Figure 1. The net yields represent the amount of honey stored less what was used

to build the packages into producing colonies and a 60-pound standard winter honey reserve.

The chart shows extreme differences in average yields owing to seasonal influence as reflected by weather and plant conditions. The nectar resources probably were in excess of the harvested crops, since it may be presumed that the average yields would have approached the maximum if all colonies were equal to the best. Each year the better lines produced one or more times the yield obtained from the poorer lines of stock. Stock improvement therefore offers an effective means for increasing the efficiency of package bee colonies.

Most users of package bees con-

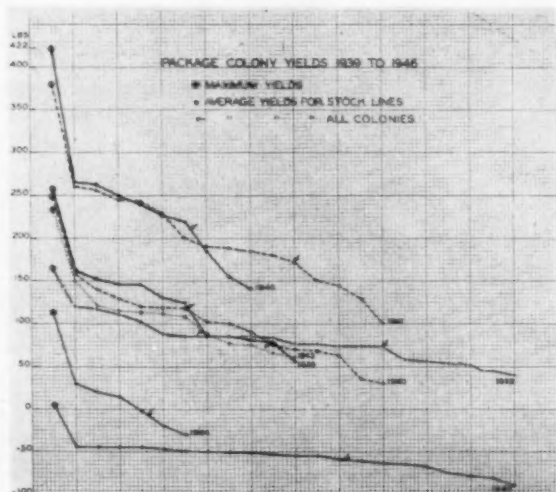
Table 1
Volume of package bee and queen production for years 1944-50 from reports of the Bureau of Agricultural Economics, USDA.

Year	No. Packages	Pounds of Bees	Pounds of Bees per Colony	No. Queens
1944	464,854	1,145,000	—	815,000
1945	493,694	1,227,000	5.3	874,600
1946	517,534	1,300,000	5.6	1,300,000
1947	555,551	1,375,000	5.7	1,375,000
1948	488,053	1,164,000	4.7	858,800
1949	335,467	767,800	—	667,900
1950	296,266	725,700	3.7	720,100

There is every reason to expect that the production and use of package bees will play an important part in the growth of the beekeeping industry. It is generally recognized that our honey-bee population is grossly inadequate to meet pollination requirements. Both the producers and buyers of package bees are encountering economic stress from which relief must be found.

Beekeeping is subject to rapidly increasing costs for materials, transportation, labor, utilities, and taxes. If these are to be offset without a corresponding increase in price for the beekeepers' products and services, every effort must be made to increase management efficiency. The purpose of this paper is to point out certain problems that affect the efficiency of production and utilization of package bees.

Approximately 1,500 packages of bees have been used at the North



¹ In cooperation with the Wisconsin Agricultural Experiment Station.

sider abnormal queen supersede their greatest problem. Evidence accumulated during the last 10 years indicates that this type of supersede is caused principally by *Nosema* infections. *Nosema* infection in the bees decreases their capacity to raise brood, and any infected queens will be superseded. The chance of a queen becoming infected in a package colony is increased because she must be fed by the original bees for over 3 weeks.

On the basis of available records, supersede of 20 per cent of the queens in package colonies can be anticipated. Any change in management that will reduce or eliminate *Nosema* infection among package bees and queens will greatly add to their efficiency.

Suggestions to the Producer of Package Bees

Colonies used for package-bee production should be managed so as to assure maximum brood rearing. Productive queens, healthy populations, adequate space, honey, and pollen are just as essential to such colonies as to those used for honey production. When populations of the former approach 20,000 bees, they are reduced by shaking. More brood is raised per bee, although less total brood per colony, at a population level of approximately 10,000. Successful honey production requires the building of a large field force in excess of the bees required for rearing brood.

Data obtained by Warren Whitcomb from the Southern States Bee Culture Laboratory have shown that over 30 pounds of bees can be taken from well-managed colonies over a 90-day period whereas the average yield of bees (Table 1) ranges from 3.7 to 5.6 pounds. The latter figures do not include the package bees used for stocking queen nuclei, but it would seem possible to triple the yield of package bees for sale, thereby decreasing their cost of production.

An effort should be made to increase the quality of stock produced, both by selective breeding and improved methods of rearing queens. The buyer could better afford to pay \$2.00 for a queen equal to the best that accompany package bees than to pay \$1.00 for one raised from poor genetic stock or one poorly reared. This statement does not mean that anyone can now supply superior genetic stock or propose a queen-rearing method with assurance that all queens will be of high quality. It

is made to point out a direction of effort the producer can follow to increase the value and thereby the efficiency of the package unit. He can probably make the most rapid progress through improvements in rearing methods that affect queen quality. Queens reared by present methods should be more severely culled before they are shipped.

Queens of different races or strains vary considerably in size and body conformation, therefore, these factors alone cannot be used to judge the quality of the queen. However, where the stock is the same, small queens are inferior to their larger and more favorably developed sisters.

Methods used in shaking package bees can have an important influence on the incidence of *Nosema* infection. The smoke-up method commonly used in some areas, while efficient in reducing labor, can increase the number of infected bees shipped in packages. Large, deep excluder-lined funnels appear equally objectionable from the standpoint of *Nosema* disease.

Nosema is most likely to be a problem when bees are shaken from inferior colonies or any colony when inclement weather keeps the field bees in the hive. *Nosema* infection will be lowest after colonies have participated in a good honeyflow for a week or 10 days or in colonies that have been shaken two or three times previously. The level of infection will vary from colony to colony and between apiary locations. Extensive surveys should be made to determine the incidence of *Nosema* among package bees shaken by different methods under the varying conditions that exist throughout the shipping region. The information gained will help shippers decide what practices they can use that will insure high-quality service to their customers.

Fewer infected bees will be included in packages if they are shaken on to a queen excluder in an open-type funnel having a collar not more than 3 or 4 inches deep. The young bees tend to crawl through the excluder, whereas the older bees take wing and return to the hive.

The reclassification of bees, together with advanced express rates, has more than doubled shipping costs. Cages received from different commercial sources have ranged in weight from 1.5 pounds to 2.4 pounds. The sugar content of sirup ranged from 40 to 60 per cent. A lower volume of sirup is consumed at

the higher concentration. The high cost of cans, screen wire, and lumber might justify reconsideration of policies affecting the reuse of shipping cages. A sliding door in one end of the shipping cage would aid the buyer in introducing packages.

Suggestions to the Purchaser of Package Bees

The bees in a package are of value only for the brood they can rear. Most of these bees die during the first 4 weeks. Under favorable conditions, a package colony will reach maximum population in 10 to 12 weeks after it is established. Favorable conditions presuppose a highly productive queen supported by healthy bees, ample comb space, and abundant stores of both honey and pollen. There is no significant difference in the rate of colony build-up between 2- and 3-pound packages when ample reserves of honey and pollen are supplied. The larger package may show an advantage if pollen requirements are not satisfied, since there will be more bees to gather whatever pollen is available. Failure to provide pollen, however, makes colony development entirely dependent on favorable weather.

The beekeeper who establishes packages on new equipment with foundation will prefer the 3-pound package because there are more bees to draw comb and bring in as much pollen as conditions permit. Such packages should be established at the beginning of dandelion bloom. Where combs of honey and pollen are available, the 2-pound package is more economical than the 3-pound. These can be established early in April or 2 to 3 weeks ahead of dandelion bloom. The earlier packages are likely to contain more *Nosema*-infected bees, but the gain in time for colony build-up for the honeyflow is a distinct advantage if the *Nosema* infection is not too severe.

A minimum of 25 pounds of sugar or honey stores should be made available to each package colony. Some seasons the best package colonies may consume 40 to 50 pounds of stores and 300 to 500 square inches of reserve pollen before the main honeyflow. High consumption benefits the beekeeper because it results in strong colonies that are essential in producing a maximum crop.

Buyers of package bees should recognize that not all the queens will be of high quality and that some queen supersedes are to be expected. Additional queens should be obtained and established in nuclei

so that poor queens or those lost from any cause can be replaced with a minimum loss of brood rearing.

The beginner establishing his first package on new equipment should purchase a 3-pound package with two queens. The extra queen can be introduced into a 3- or 4-frame nucleus box, using about 20 per cent of the bees from the package. Should the main colony lose its queen or be inferior, the nucleus can be united to it. If both the colony and nucleus develop normally, combs of excess sealed brood and bees from the nucleus can be added to the colony to increase its rate of development. The entire nucleus can be united to the

colony during the early part of the honeyflow.

If the extra queen is needed, it will provide the means of saving the investment. When not required, the additional brood will more than offset the cost of the extra queen, labor, and nucleus equipment.

Beekeepers establishing a large number of packages on drawn comb can profitably establish 20 per cent as many nuclei as package colonies. By buying additional 2-pound packages containing three queens, they can divide each package to establish three nuclei.

When weather conditions permit

adequate pollen collection, packages installed on foundation and fed continuously with sugar sirup will normally require a second brood chamber within 5 to 6 weeks. Feeding of sugar sirup should be continued until the second set of combs is drawn. By the time a third chamber is required, the main honeyflow should supply nectar for the drawing of additional comb. Those established on comb should require a second brood chamber within 4 to 5 weeks. A third set of combs may be needed 10 to 14 days later. Packages of high quality can be built into productive colonies by practicing good management.

Talks on Honey and Health -

by D. C. Jarvis, M.D.

Why Use Honey?

(Continued from February)

The third new framework in which to carry on medical reasoning was one dealing with the relation of the daily protein intake to the growth of harmful microorganisms. A farmer knows that if he increases the protein content of the ration fed his herd of dairy cows he will increase the amount of milk produced each day by his herd. But he also knows from experience that if he continues to increase the protein content of the ration there will come a time when some of the cows in his herd will develop mastitis in their udder and of these cows developing mastitis some will show the presence of streptococci germs in the milk when it is examined under the microscope.

The normal reaction of milk as it comes from a cow's udder is weakly acid but as the protein content of the ration increases there comes a time when the normal weakly acid reaction of the milk changes to alkaline which indicates a change in the chemistry of the cow's body. When this happens the body of a dairy cow becomes a suitable candidate for the making of humus to enrich the soil of the earth. When the cow's body becomes a suitable candidate for the making of soil humus microorganisms which are able to kill and destroy the cow's body invade the

cow's body to do their work just as microorganisms in the garden do their part in creating humus from leaves, garden waste material and garbage with which to enrich the garden soil. When invasion of the cow's body by harmful microorganisms takes place the farmer lowers the protein intake fed the cow and sends for the veterinary to stop the growth of harmful microorganisms by means of suitable treatment.

We, as a correspondence study group, learned in time that a high protein daily intake in individuals was associated with the growth of harmful microorganisms in the body. When by means of a high daily protein intake, especially meat, the physiology and biochemistry of the human body changed, then this body became a candidate for the making of humus material with which to enrich the earth's soil. In order to bring this about, harmful microorganisms invaded the human body because they now found body fluids and tissues represented suitable soil for their growth. By their growth they killed the body and returned it to the earth in the form of humus with which to enrich the earth's soil.

In time it was learned that in order to maintain continued good health and to recover from sickness

produced by the growth of harmful microorganisms in the body, it was necessary to discuss with each patient the amount of the daily protein intake represented by eggs, meat, milk, cheese, nuts, peas, beans, poultry, fish, and seafood and to arrange to have the daily protein intake low enough so that the body would not become a candidate for humus with which to enrich the earth's soil. This meant that emphasis was to be placed on fruit, vegetables and honey.

The fourth new framework within which to carry on medical reasoning was one developed from a study of food customs here in Vermont. By the trial and error method Vermonters learned, with the passing years, to serve an acid when protein was served as food. Apple cider vinegar is poured over baked beans. Cranberry sauce which contains four different acids is served with fowl. Apple sauce which contains malic acid is served with pork and ham. Mint sauce whose basis is vinegar is served with lamb. A slice of lemon is served with fish and seafood. Mushrooms which contain citric acid are served with steak.

Protein food tends to disturb the chemistry of the body as shown by

shifting the normal acid reaction of the urine to alkaline. By serving an acid with protein food, Vermonters learned the undesirable effect of protein food on the chemistry of the body could be lessened and sickness be avoided.

As a result of medical reasoning carried on in this framework, we began suggesting to patients that they protect the harmful effect of protein food on the body by taking at the same meal an acid such as cranberry juice, apple juice, grape juice, or if none of these were available to add two teaspoonfuls of apple cider vinegar to a glass of water and drink the contents of the glass.

We also learned that another food custom existed in Vermont in which honey was either used in making foods from flour or was taken separately when such food was taken. Honey and hot biscuits were taken together. Honey was often spread on bread. The honey supplied that which had been removed from the white flour when it was highly refined with the result that the human body did not suffer ill effects from the highly refined white flour. It was learned in time that a great deal could be accomplished in maintaining continued good health and avoiding sickness by taking an acid with protein food and taking honey when food made from flour was eaten. By doing so the human body was protected from becoming a candidate for soil humus with which to enrich the earth's soil and its destruction by harmful microorganisms.

The fifth new framework relates to the reaction of the urine when taken with Squibbs Nitrazine Paper purchased at the drug store. The question arose as to whether sickness appears on an acid urine reaction background or on an alkaline urine reaction background. In order to learn the answer twelve little children five years or younger and twelve adults were enlisted to serve as human guinea pigs for two years. They kept a daily urine reaction record and a daily food diary which showed the food taken at each meal each day. After some experimenting it was learned that for medical purposes the reaction of the urine should be taken on rising in the morning and before the evening meal. In time it was learned that sickness appeared on an alkaline urine reaction background and recovery from sickness took place when the urine reaction shifted back to acid. It was learned that an individual generally

showed an alkaline urine reaction each day for one or two weeks before sickness appeared. If the urine reaction was shifted to acid by giving children cranberry juice three or more times a day and the adults taking two teaspoonfuls of apple cider vinegar and two teaspoonfuls of honey in a glass of water three or more times a day the sickness either did not appear or if it did appear it was mild in character and the period of recovery short.

During this two years' study it was learned that foods made from wheat, white sugar, muscle meats such as beef, lamb, pork, and ham, citrus fruits, and citrus fruit juices produced an alkaline urine reaction in the majority of individuals. From this observation a health promoting diet was developed which exchanged white and whole wheat flour foods for rye flour and corn meal foods. Wheat cereals were exchanged for oatmeal and other cereals not containing wheat. White sugar was exchanged for honey. Muscle meats such as beef, lamb, pork, and ham were limited to once a week. The eating of fish and other seafood as well as baked beans and nuts was recommended. Citrus fruits and citrus fruit juices were exchanged for cold country fruits and their juices such as apples, grapes, and cranberries.

The sixth new medical framework dealt with the growth of the human body. According to the draft maps of the first world war we are underheight here in Vermont. I measured calves in four prize winning herds of dairy cows and learned that calves in Vermont were also undersized when their measurements were compared with a table representing the normal growth rate measurements. I spent two years growing calves from registered Jersey cows and learned I could match the normal growth measurements when potassium was added to the daily food intake. Vermont is a potassium deficient state which explains why its inhabitants are underheight.

Pediatricians who specialize in treating children, know that if a child is not growing at the rate it should it will do so if potassium is furnished the body. I tried honey as representing a suitable source of potassium and found it produced the desired growth in children whose parents were underheight.

If two ounces of apple cider vinegar is poured over the ration of each cow at each feeding twice a day in a herd

of 54 cows it will be observed at the end of two months that the odor of manure and the odor of ammonia is no longer present in the barn. If a human individual takes two teaspoonfuls of apple cider vinegar in a glass of water each meal it will be noted that at the end of two months there is no odor to the bowel movements. When gas is passed by rectum there is no odor present. This demonstrates that a marked change has taken place in the intestinal flora with a disappearance of germs responsible for putrefaction. In a kennel of Brittany Spaniel hunting dogs when one tablespoonful of apple cider vinegar was added to the ration of each dog once a day worms disappeared from the digestive tract as shown by their disappearance from the bowel movements. When a farm horse with worms present in the bowel movements receives one teaspoonful of apple cider vinegar for each 100 pounds of body weight added to the ration at each feeding the worms disappeared in two to four weeks' time.

In human individuals if you wish the health of the digestive tract further improved add two teaspoonfuls of honey to the glass of water to which two teaspoonfuls of apple cider vinegar has been added. From these observations a seventh new framework within which to carry on medical reasoning relating to the health of the digestive tract was developed.

It was observed that when the protein content of a dairy cow's ration became too high, the milk in a high producing cow would often undergo changes in its appearance. First, the milk would become thicker resembling a thick soup. Next, flakes would appear in the milk and then lumps would appear. This changed character of the milk may sometimes be cleared up by lowering the protein content of the ration. If this is not sufficient then potassium and apple cider vinegar are given by mouth from a bottle. One teaspoonful of Lugol's solution of iodine, which contains potassium and which every druggist knows how to make, is added to a bottle containing six ounces of apple cider vinegar and six ounces of water. The contents of the bottle are given a dairy cow by mouth at the time of morning milking and again at the evening milking. This mixture will generally restore the milk to normal.

(to be continued)



Lewis Woodworth Parks

Lewis Woodworth Parks, 70, died at his home in Watertown, Wisconsin, on January 21, 1952, after an illness which began with a heart attack in 1948. Mr. Parks had been in delicate health since that time, forcing his retirement from active business as president of the G. B. Lewis Company in that year.

He was born in Watertown on May 13, 1881, where he attended public schools and later the University of Wisconsin, receiving his B. S. degree in commerce in 1904. In May, 1905, Mr. Parks began learning the business of the G. B. Lewis Company. Before long he had developed a cost system and in 1909 he was made Superintendent of the factory.

On August 28, 1909, Mr. Lewis was married to Miss Marguerite Cunningham, of Princeton, Illinois. To this union three children were born: Steven, Catherine, and Charles Parks. Surviving him are his wife, his daughter, Mrs. Catherine Parks Baumgardner, and one son, Steven.

Mr. Parks was responsible for the organization of the American Honey Institute. On February 29, 1923, he called a meeting in Chicago of a number of bee supply manufacturers and honey packers to discuss the organization that would make its prime consideration the publicizing of honey. Mr. Parks had contacted Dr. H. E. Barnard, then president of the Institute of Baking and an authority on food. At this meeting were representatives from the following organizations: A. I. Root Company, G. B. Lewis Company, Dadant & Sons, Chas. H. Weber,

F. W. Muth Company, J. G. Paton Company, and August Lotz Company.

Dr. Barnard presented a plan which was similar to the one used by the American Institute of Baking and after pledges were received from those present amounting to a sum of \$5,000, Dr. Barnard was engaged to act as president of the American Honey Institute and to show what could be done to give honey wide publicity. His headquarters were at Indianapolis, Indiana.

Mr. Parks was named Chairman of the Board of Directors of the Institute in which capacity he served until 1934 when he resigned due to the press of other business. However, his help was badly needed, and he was induced to again accept the chairmanship in 1941. In this position he served until 1952.

Very few beekeepers realize the effort and time spent by Mr. Parks in helping to develop the Institute in its work of publicizing honey.

When on February 6, 1929, Malitta D. Fischer (Jensen) was named as secretary to Dr. Barnard, with an office in Madison, Mr. Parks was more than ever of great help in guiding the Institute on its way. As Madison was only a short distance from Watertown, it was possible for Mr. Parks to make frequent visits to the Institute office to give his assistance and advice. Even after he was stricken by illness in 1948 he continued making regular visits to Madison with Mrs. Parks often accompanying him. Such selfless devotion to a cause is too rarely

found in present day business affairs.

In 1939, Mrs. Harriett M. Grace became Director of the Institute and her testimony as to the great value of Mr. Parks' competent advice is well known to those close to the Institute. The entire beekeeping industry owes a great debt to and loses a great friend in Lewis W. Parks.

AMERICAN HONEY INSTITUTE

An urgent appeal has been issued for members of the honey industry, as well as others, to re-examine their plants for every particle of scrap iron and steel. The slogan is:

"GET THAT SCRAP TO YOUR DEALER TODAY AND URGE OTHERS TO DO THE SAME."

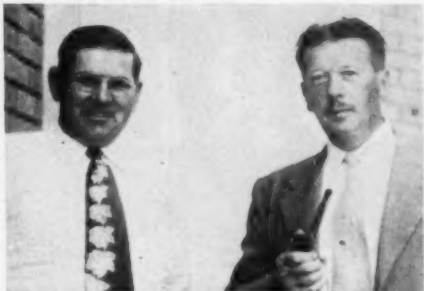
* * * * *

Honey for Breakfast Week will be celebrated as usual beginning Easter Sunday, April 13. One of the big milling companies will carry colorful advertisements of honey and hot biscuits in the April issue of magazines. Watch for these ads.

The promotion of honey at this time will be carried on in newspapers throughout the country. Radio and television programs will feature this Week. Coast to coast programs have been planned for some months.

Trade journals, as usual, will carry notices of the Week.

Honey producers are beginning to order point-of-sale material in the way of posters, window streamers, Honey for Breakfast folders and stickers.



Dr. S. W. Edgcombe, Department of Horticulture, Utah State College, (left) and August F. Bellmann, Manager of the Arboretum, Missouri Botanical Garden, together at the Federation convention at Tucson. Mr. Bellmann is president of the Eastern Missouri Beekeepers' Association and has recently been honored by election to the office of president of Friends of the Land, devoted to conservation and the improvement of agriculture.



"This is my 4-H exhibit at the county show. I took first place for the second year. My apiary, which consists of eight colonies, is located between Chicago and Elgin, Illinois. We live in a little town and have three acres. I started beekeeping two years ago when I carried honey production as a 4-H project. The first hive was given to me by the Cook-Du Page County Association. David G. Guthrie, Rock Willow Apiary, Roselle, Ill.



This mechanical lift is inexpensive; made by the Thomas Truck and Castor Co., Keokuk, Iowa. The platform has two bent iron legs on either side and a wooden top rim on a metal base. They cost about \$5.00 to make in 1935 (probably half again more now). We made them ourselves in spare time. They are stout enough to last a lifetime. The platform is made to accommodate two tiers of supers, eight high. They can be carried in the truck, loaded at the yard, trucked off at the honey house.



O. B. Fadgett, Cliffside, North Carolina, sends this picture of Walter Suggs and his bees. This is about all the information he gives but let's comment. The striped bee suit he is wearing is unusual. We would prefer high shoes not low ones. The hive stand looks as though it is strong and durable and well up off the ground. Hives are well painted and neat. Tubs between hives for flowers is something we have never seen before. Grass and weeds are kept down. If the commercial boys worked a bit of this care into bee yards, beekeeping would be more fun.



"In one of your 'All Around the Bee Yards,' you say you are disturbed about reports of 100 pounds and up. Perhaps this picture will also disturb you. You will note the sealed burr comb on the supers. These supers averaged 54 pounds per super. There were five full supers at the time the picture was taken. Another full super was removed the first of September. I admit this was an unusual crop but my per colony average over the years runs about 125 pounds." L. E. Bingham, Cliff Haven Apiaries, Plattsburg, N. Y.

**DADANT'S
STARLINE HYBRIDS**
Package Bees
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Pat. Off. Glenn, California

ITALIAN BEES AND QUEENS
2-lb. package with queen \$2.75
3-lb. package with queen 3.50
Queens (postpaid)50
Guaranteed full weight and prompt
shipping dates. Health certificate
with each shipment.

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Select Italians
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Package Bees
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2-Lb. Bees with Queen \$2.75
3-Lb. Bees with Queen \$3.50
Queens Each85
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For Queenless Package Deduct
Price of Queen.

No Charges for Clipping or Dotting
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Write for Our Prices on 2 to
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From ten year's experience we can
offer you the best, gentlest bee to
work with at the lowest prices possi-
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Queens, a specialty, 75c
2-lb. pkg. \$2.75
3-lb. pkg. 3.75
Health certificate, live arrival
guaranteed.

JOHNNIE ARNOUVILLE
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ITALIAN BEES AND QUEENS

2 lb. pkg. bees — queen \$2.75
3 lb. pkg. bees — queen 3.50
4 lb. pkg. bees — queen 4.25

10% down, balance 10 days before
shipping date. Live delivery guaran-
teed. Health certificate with each
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10% discount on 15 packages up.

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BRITISH BEE JOURNAL

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AMERICAN BEE JOURNAL

Renew Your Subscription

BEE WORLD



Bee World Dresses up . . .

In a new cover, different format, and new size (5½ by 8½), Bee World, the international bee publication, was issued this January. The attractive cover design is based on a new form of tetrahedral gnomonic projection of the world which was especially designed by F. V. Botley. In this projection of the surface of the earth, it is spread out flat on three regular hexagons—in fact three bees' cells. We congratulate Bee World and wish them every success in their publication. We encourage those interested in beekeeping everywhere and especially educators and scientists to obtain this journal.

In an interesting way, the Bee World has adopted a current policy of publishing an article which tells in greater detail about one of the abstracts which appeared in the month previously, and pointing out the importance of such to practical beekeeping.

The remainder of the publication is devoted to items of international beekeeping news and apicultural abstracts. It is of importance to note that summaries of articles and abstracts are published in French and German languages.

Inasmuch as advertisements make possible the publication and extent of size of the magazine, the attention of readers is especially called to this. The American Bee Journal has arranged to receive orders for annual subscriptions to the Bee World. The price is \$3.00 postpaid. We are doing this to encourage the publication of this journal because we think it is of great importance to beekeeping everywhere.

A Friend to Beekeeping . . .

The January issue of *The Organic Farmer*, a magazine dedicated to farming without chemicals, e.g. fertilizers and pesticides, devoted its 64 pages almost lock, stock, and barrel to one of the farmer's greatest friends—the honey bee.

Convinced that organic farming and bee culture go hand in hand, the editor stated: "In a way, this January issue may be more of an epitaph to bees than an introduction, for their ranks are being constantly thinned by powerful insecticides and disease. But it is extremely important that all organic farmers—who don't use sprays—know the importance of the bee and that they provide a haven for her."

In addition to editorial comments throughout the issue, five feature articles appeared. Thomas Powell, in an excellent article entitled "Our Vanishing Bees," began his story of decreased seed yields accompanied by a reduction in honey-bee colonies with this statement: "The lowly honey bee is the most important living creature in agriculture." He recommended more bees and the planting of nectar and pollen plants to encourage beekeeping, concluding that "the conservation of the bee is vital to the prosperity of agriculture and of the nation."

Ray Day, in an article called "My Bees Are Dying," told the story of a blue-ribbon beekeeper and honey producer of Chico, California—C. F. Eitel—a story of what happens to bees when poisonous chemicals are used indiscriminately. Melvin Pellett wrote about plants that make honey, and Dr. W. Schweisheimer's article, "Don't Forget Honey," was an excellent story of historical use, present usage, and a plea for people to keep a honey jar in plain sight and use it! And F. G. Tontz's story was titled properly, "Winter Bee Care Pays Off."

We commend *The Organic Farmer* for devoting this issue to the problems and importance of keeping bees. We agree that organic farming and bee culture go hand in hand. We want to support your program as you are supporting ours. We know that chemicals are not producing plants that yield nectar which attracts the bees that accomplish insect pollination and set of fruit and seed crops. Moreover, we know how disastrous chemical poisons are to honey-bee colonies. In brief, we say: Now the right people are supporting beekeeping. You are the ones to tell this story to farming!

Yours is no epitaph to bees, Mr. Editor! It surely is a stimulant to an industry which is determined more than ever to rise to its proper relationship to agriculture and our country's economy.

ITALIANS PACKAGES FOR 1952

	Queens	2-lbs. with Queen	3-lbs. with Queen
1-24	\$1.10	\$3.50	\$4.50
25-49	1.00	3.25	4.20
50-up	.95	3.00	3.90

Triangle Apiaries

North

South Carolina

Northern California ITALIAN PACKAGE BEES AND QUEENS

	1-24	25 or more
2-lb. pkg. w. q.	\$3.75	\$3.50
3-lb. pkg. w. q.	4.50	4.40
	1-10	11-24
Extra queens	1.20	1.10
10% books the order. Balance 10 days before shipping date.		

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Shipments begin March 15
**TWO HIGH PRODUC-
ING STRAINS**

Price List—March 15-
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Reg. U.S.
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Dadant's Starline Hybrids
Reared by our efficient methods.

	2-lb. w.q.	3-lb. w.q.	queens
1-24	\$3.45	\$4.55	\$1.42
25-99	3.50	4.50	1.35
100 up	3.30	4.30	1.30

	Regular Stock	
1-24	3.40	1.30
25-99	3.25	1.25
100 up	3.00	1.10

Queenless packages deduct price of queen. Guarantee live delivery.

STANDARD

Beekeepers Equipment

It pays to use the complete line of **STANDARD** equipment. Ask your dealer about this quality line today or write us for catalog and prices.

Standard Churn, Inc., Wapakoneta, O.

HONEY WANTED

Cut Comb and Extracted
Advise what you have

T. W. BURLISON & SON
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FREE PACKAGES AND FREE QUEENS

If you buy before March 20

2-lb. pkg. w/queen	— \$2.45 Up
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Write for information on free packages and queens

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NORTHERN QUEENS

Gentle 3-banded acclimated Italian stock; shipping starts in May.

"They Produce"

1-1000	\$1.50
Select tested	2.00
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GIVE HIM YOUR BEST

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Caucasian Bees & Queens

All Around The Bee Yard

by G. H. Cale

When the middle of February comes, waiting for spring gets more difficult. Things you know you must do before the bee season press on your mind like voodoo pin pricks, yet you just now don't want to stop what you may have been doing all winter. It's a time of barbed wire in no man's land. The habits of humans are much like those of the lower animals. The pig grunts and burrows, mudds off, scratches, and eats everything edible (from a pig's viewpoint); every pig any of us has ever known in domestication does about the same.

Not that we are "piggish" but we, too, hate to give up tomorrow what we do today. Only in the fresh, young years of eager anticipation do we drop caution, seize chance, and plunge into experience. So the world pushes forward. Well, where does all this get me? Just where I started. Got to start the bee work; just got to.....tomorrow.

I've been around since last month; for one, out into Kansas. The alfalfa growers and the beekeepers there are struggling to get together not knowing just how to do it, but realizing that they must do it. Here in Illinois and surrounding states, the same struggle goes on. More than the normal number of beekeepers have come here to Hamilton lately and most of them are having some kind of a fling with pollination. Out in the big seed areas there are pollination specialists who are actually getting wealthy but saying nothing about it; and there are some who are losing their shirts, and saying nothing about that.

A seed company approached me last week to help them with research to determine the possibilities of using bees for increased seed yields here in Illinois. I would be foolish to pass up this chance to learn how to operate for pollination here in the Midwest. Some day we

will know just how to operate for the clovers we have so the farmer and the beekeeper will both profit. Then, how they will like each other! At present we are a long way from that happy day.

It seems to me quite evident that one of the changes that is evolving out of the mixed up marketing situation is evidenced by the steady increase in the number of producer-distributors. This is a good thing. Those who have found they can't stay in production for the returns they get from buyers or co-ops, and who then start their own sales and distribution, slowly bring us nearer to the time when the competition that results will force us into some plan of orderly marketing. It may well be that we will find small regional marketing groups bringing happiness and prosperity to most of the

BEES AND QUEENS

for

1952

Place your orders now for high quality package bees and queens. A small deposit will guarantee delivery within five days of date requested, or **ONE-HALF YOUR PURCHASE PRICE WILL BE REFUNDED.**

	2-lb.	3-lb.	4-lb.
1 to 24	\$3.25	\$4.25	\$5.25
25 to 49	3.05	4.05	5.05
50 and above	2.85	3.85	4.85

For loose-queen packages, add \$1.00 to above price. For queenless packages, deduct \$1.00.

EXTRA QUEENS — \$1.00

THE PUETT COMPANY

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"Where Satisfaction Is a Certainty"

Three-Band Italian Package

BEES AND QUEENS

and Pure Italian Three-way D. R. Queens



Full weight, prompt shipment. Young bees. State health certificate with each shipment. Live arrival guaranteed.

Replacement or refund made promptly upon receipt of bad order from your express agent.

1952 PRICES WITH YOUNG LAYING QUEENS

Lots of	2-lb.	3-lb.	4-lb.	5-lb.
1 to 29	\$3.25	\$4.00	\$4.75	\$5.50
30 to 100	3.00	3.75	4.50	5.25
100 up, each	2.80	3.50	4.25	5.00

Tested queens \$2.00 each.

Untested queens \$1.00 each.

For introduced queen add \$1.00 per package. If queenless bees are wanted deduct \$1.00 from the package price.

JACKSON APIARIES

Funston, Georgia, U. S. A.

serious producers within their reach. The next step is a cooperative organization to unify all the selling groups in a nation-wide elevation of honey marketing that will make today's mess a scene from the dark ages.

Early feeding now seems to be something we have neglected. Perhaps some other word should be used since the usual conception of "early" is not early enough. Often bees in winter will work up through the stores that lie above them until they reach the top bars of the combs containing their stores. When they have done that, weather conditions may be such that they cannot move to another position where stores may still be in reach. They can go no farther upward, and they cannot reassemble sidewise. So they starve in a hive still heavy with honey. Candy feeding over the top bars of the combs on which the bees are clustered; or even dry sugar made available there, plus a supply of pollen supplement, in late winter or very early spring (late February or the very first of March)

will often keep colonies coming along nicely that otherwise would have no brood or actually die.

3-Banded
ITALIAN BEES & QUEENS
2-lb. pkg. with queen \$3.00
3-lb. pkg. with queen 4.00
Extra queens 1.00
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CUPRINOL [®] **STOPS ROT**
Applied by brush, spray or dip to the bare wood. Cuprinol will greatly lengthen the life of your hives by stopping rot. May be painted over. Does not offend bees. At hardware, paint and lumber dealers or direct. \$4.70 gal.; \$1.75 qt. Check or money order. No C.O.D.'s
CUPRINOL Division, Derworth Inc.
61 Maple St. Simsbury, Conn.

ITALIAN BEES
Write for prices
SUNRISE APIARIES
Petal, Mississippi

A Good Rule to Go By
Buy your Bees and Queens from—
ALABAMA APIARIES
Urich — Ala.
Italian Queens \$1.00
2 lbs. — \$3.00; 3 lbs. — \$4.00

SPEARS' QUALITY BRED
ITALIAN BEES AND QUEENS
1952 PRICES
2-lbs. with Queen \$2.50 Discounts
3-lbs. with Queen 3.50 on
4-lbs. with Queen 4.40 large
Queens (air mail)50 orders.
Satisfaction assured, live delivery guaranteed.
SPEARS' APIARIES
Hamburg, Louisiana

ITALIAN BEES & QUEENS
2-lbs. with queen \$2.50
3-lbs. with queen 3.25
4-lbs. with queen 4.00
Queens 75c
RAYMOND McFARLING
Shannon, Miss.

A CONSTANT MARKET FOR
YOUR BEESWAX
DADANT'S, Hamilton, Illinois

If You Operate at Least 500 Colonies

It Will Pay You to

Write for

FREE COPY

of Bulletin 100A, which shows how you can save real time and money with a

Bogenschutz Uncapper

C-Bee Company

National Distributor
331 Union Bldg., Syracuse 2, N. Y.
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509 Plymouth St., Sioux City, Iowa

BETTER BEES

High Quality & Prompt Service

RELIABILITY

That's What We Offer in Package Bees and Queens

ITALIANS - CAUCASIANS
ITALIAN HYBRIDS

At Prices You Can Afford to Pay
Book Your Order Now
No Deposit Required to Book Your Order

Prices to May 20th

In Lots of:	Queens	2-Pound & Queen	3-Pound & Queen	4-Pound & Queen	5-Pound & Queen
1 - 24	\$1.15	\$3.50	\$4.40	\$5.30	\$6.20
25 - 99	1.05	3.25	4.10	4.95	5.80
100-499	.95	3.00	3.80	4.60	5.40

Tested Queens, \$2.00 Each

Queens Postpaid—Airmailed—Clipped—
No Extra Cost

Queenless Package—Deduct Price of Queen
Packages F.O.B. Shipping Point

THE STOVER APIARIES
Mayhew, Miss.

ANSWERS Queens and Packages

★ ★
Telegraph or
Telephone Roseville 932J

D. T. WINSLETT
7736 Auburn Road
Citrus Heights, Calif.

ITALIAN PACKAGE BEES & QUEENS for 1952

We are now booking orders for
Spring Delivery.

GIRARDEAU APIARIES
Tifton, Georgia

BEE SUPPLIES

A. H. Rusch & Son Co.
MANUFACTURERS-JOINERS
REEDSVILLE, WISCONSIN

NEISES

HONEY EXTRACTING
and
BOTTLING EQUIPMENT

Mf'd. and For Sale by
THE NEISES CO.
Box 249, Marshfield, Wis.

GRAY CAUCASIANS

Package Bees and Queens
Prompt and reliable service.
Write for prices.

BOLLING BEE CO.
Bolling, Ala.

ITALIAN BEES AND QUEENS

2-lb. pkg. W.Q.	1.25	\$2.50
3-lb. pkg. W.Q.	\$2.75	\$2.50
4-lb. pkg. W.Q.	3.50	3.25
4-lb. pkg. W.Q.	4.25	4.00

10% will book your order, balance 10 days before shipping date. Health certificate and live delivery guaranteed with each order.

RED DIAMOND APIARIES
Mansura, La.

FREE...

A Sample Copy
"Gleanings in Bee Culture"
LOOK IT OVER
YOU WILL LIKE IT
A. I. ROOT CO., Medina, Ohio

Answers . . .

conducted by

Frank E. McLaughlin



We are moving to another farm 13 miles west. I will be moving machinery and personal property this winter. When should I move my bees, on a cold or warm day, and how should they be screened for moving?

Francis Pawlitschek, Minn.

Pick a fairly warm day to move your bees. On a cold day they will be clustered and there is more danger of injury to the colony. Move them on as warm a day as possible at a time when no sudden weather changes are expected. If the weather should turn cold suddenly the bees wouldn't have time to calm down and cluster again. Screen the entrance by removing the entrance cleat and tacking screen wire over the entire opening.

Please explain how to use the two-queen system.

V. T. Worcester, Jr., Kansas

We have tried to simplify this so that it will not require very much extra work. Bees are wintered in two hive bodies with abundant stores. In the spring the bodies are reversed. The queen then occupies the more empty of the two bodies which is now on top. As soon as we are able to obtain queens that are satisfactory we then put a screen between the two bodies with the queen of the colony under the screen. The top part then is queenless. Introduce a new queen to the top part. This top is given an entrance in front so that you virtually have, on acceptance of the queen, two colonies, one above the other with the screen between.

At the very beginning of the honeyflow, or whenever there seems to be a crowding in the two parts we add supers to both. After the flow has been in progress about a week or ten days we remove the

screen, put the supers at the top with the two bodies of brood below, and super on top thereafter. Otherwise this scheme is just like ordinary bee-keeping.

Is it necessary to feed pollen in the spring if the bees have had plenty of winter stores? I have two colonies of bees on my farm and use them for pollination and would like to know a good way to market my chunk honey.

Lloyd Weidman, Kansas

In your location it is probably not necessary to feed pollen or supplement in the spring as there are plenty of sources of natural pollen early in the year. However, in some parts of the country it is necessary to feed it. Sugar sirup may be fed in the spring and fall to get sulfathiazole into the brood nest as a tonic to the bees.

If chunk honey is advertised and signs are put up it should be fairly easy to sell it at home. Any product needs to be advertised. If you lack time to care for your bees and extract and sell the honey, you might find a 4-H club member in your locality who is interested in bees and who would agree to take care of yours. This is only a suggestion.

Your two colonies of bees will be of value to you in pollinating your crops. But they should be properly cared for and not allowed to swarm, for if they swarm your greater force of bees will be lost. If you got someone to care for your bees and take care of the honey you might work out an arrangement whereby they get a percentage or all of the honey.

Questions will be answered by letter or on this page. Please address Frank E. McLaughlin, c/o American Bee Journal, Hamilton, Illinois.



CAUCASIANS, CARNIOLANS

Hardy, prolific, rapid build-up, finest of workers. **GENTLEST OF ALL RACES**—Gentleness is safest in towns, near neighbors, or near the highway. Gentleness saves time, sweat, patience and work. Northern breeders used. Untested queens \$1.20 ea. Air Mail. Discount on quantity orders. Ask for package yet. Ready March 1st. Over 25 years a queen breeder.

ALBERT G. HANN
LA BELLE, FLORIDA

—HONEY WANTED—

CANADIANS AND LESS THAN CANADIANS. Send samples and quote best cash price delivered to us. All grades.

HONEY SALES COMPANY

1804-08 No. Washington Ave.
Minneapolis 11, Minnesota

ITALIANS

Let us fill your bee needs—now is the time to order those bees. Liberal weights, live delivery.

We Guarantee.

	2-lb. w/q	3-lb. w/q
1-25	\$3.40	\$4.50
25-up	3.10	4.25
Queens	\$1.10	

The Cherokee Bee Co.
Cordale, Georgia

PACKAGES FOR 1952

2 lbs. with queen \$2.50
3 lbs. with queen \$3.00
4 lbs. with queen \$3.50
Health certificate, and live delivery guaranteed.

CLOVER BEE FARMS
Hessmer, La.

CANADIAN BEE JOURNAL

Canadian beekeepers have much in common with their neighbors in the U. S. If you are interested in bee activities "North of the Border," send us your subscription NOW. Subscription price, \$1.75 per year in U. S. A.

Canadian Bee Journal
Streetsville, Ontario, Canada

Bright Yellow

ITALIAN BEES AND QUEENS

2 lbs. bees with queen \$2.75
3 lbs. bees with queen 3.75
Untested queens at 80c each

Full weight, prompt shipment. Young bees. Health certificate with each shipment, and satisfaction. We guarantee live arrival.

A. J. DUCOTE, Hamburg, La.

Starline

SUNKIST

Italian



Reg. U.S. Pat. Off.

Your choice of two fine lines. The Starline hybrid artificially bred for top performance plus resistance to AFB. Our regular Italians a favorite for years. Parcel post or Express. Early orders solicited.

	Starline Queens	Italian Queens	2-lb. w/q	3-lb. w/q	Pkgs. with Starline Queens
1-24	\$1.45	\$1.10	\$3.50	\$4.50	Add 35c
25-50	1.35	1.00	3.25	4.30	Add 35c
50-up	1.25	0.95	3.00	3.90	Add 35c
100-999	1.25				

SUNKIST BEE COMPANY

Convent, La.



When You Want
QUALITY at LOW COST
Look For This Sign

BEES QUEENS

Trade Mkt. Reg.
U. S. Pat. Off.

KELLEY—"The Bee Man"

Three-banded Italian bees and KELLEYS ISLAND improved hybrid queens direct from our own bee farm. Shipments start April 1st—express or parcel post shipment. Thousands of extra queens.

	KELLEYS ISLAND QUEENS	2-Lbs. Bees & K. I. Queens	3-Lbs. Bees & K. I. Queens
--	-----------------------	----------------------------	----------------------------

1-24	\$1.10 air mail	\$3.50	\$4.50
25-99	1.00 air mail	3.25	4.25
100 & up	.95 air mail	3.00	4.00

WALTER T. KELLEY CO., Paducah, Kentucky

WHOLESALE

Get together neighbors, stop being robbed by express.

BEES—3-lb. pkg. with queen—\$3.75 each.

Lots of 300 delivered to your door by truck. 1500 mile radius, contact us on small orders en route from here to Chicago and from here to Detroit, Mich. One-third will book order, balance on arrival.

QUEENS—100 up—75c
Satisfaction Guaranteed

O. K. ANDERSON & SON

Coffee Springs, Ala.
Box 193

HOWARD WEAVER'S

CAUCASIAN PACKAGE BEES AND QUEENS

	Queens	2-lb. Pkg. W.Q.	3-lb. Pkg. W.Q.
1-24	\$1.20	\$3.50	\$4.50
25-49	1.10	3.25	4.25
50 & up	1.00	3.00	4.00

All queens are shipped postpaid, package bees are express collect unless buyer remits postage with order.

HOWARD WEAVER

NAVASOTA, TEXAS

THREE-BANDED ITALIAN PACKAGE BEES AND QUEENS

Italian stock that is carefully selected primarily for what they produce and their gentleness. Place your 1952 requirements with me now. Have Caucasian queens also. Prices are:

	Queens	2-lb. w/q	3-lb. w/q	4-lb. w/q
1-25	\$1.15	\$2.00	\$3.00	\$4.00
25-50	1.05	1.80	2.80	3.80
50-100	1.00	1.65	2.65	3.65

FARRIS HOMAN - - - - - Shannon, Mississippi

Dadant's for Honey Labels

—Send for complete catalog

JENSEN Says,—

Don't delay another day, to order those package bees and queens you contemplate needing this spring. Time passes swiftly, and early orders help shippers prepare schedules. We have greatly increased production, and improved facilities to better serve you.



Reg. U.S.
Pat. Off.



"Magnolia State" Italian Bees and Queens

Quantities	Queens	2-lb. Pkgs. W/Qs.	3-lb. Pkgs. W/Qs.
1-24 -----	\$1.20	\$3.75	\$4.75
25-99 -----	1.10	3.50	4.50
100-999 -----	1.00	3.25	4.25
1,000-up -----	.95	3.00	4.00

For Queens of Dadant's Improved Stock of "Starline" D.B. Hybrids, add 25¢ per queen or package. We clip and mark free.

Packages via Express Collect. Parcel Post charges additional.
Will load your truck by prearrangement

JENSEN'S APIARIES, MACON, MISS., U.S.A.

"The business QUALITY built."

Brasos Valley Apiaries
Cameron, Texas

Bees and Queens

Brasos Valley Apiaries
Cameron, Texas

ITALIAN OR CAUCASIANS

2-lb. bees with young queen -----	1 pkg. -----	2 or more -----
3-lb. bees with young queen -----	\$3.00 each -----	\$2.75 each -----
	4.00 each -----	3.65 each -----

Over a quarter century in the same place, same business, under the same name, is my record. My motto: I expect to do business with you again.

H. E. GRAHAM

Cameron, Texas

CAUCASIANS UNLIMITED

Unlimited in Quality Unlimited in Quantity

In 1952, more than ever before, the largest shipper of quality Caucasian queens exclusively. Improved breeding stock and improved methods of queen rearing will help to insure more profit and pleasure in beekeeping when you buy Caucasians Unlimited. Quality and quantity with the kind of service you have a right to expect.

Prices postpaid by Air Mail

Less than 12	\$1.25 ea.
12 to 49	1.15 ea.
50 to 99	1.10 ea.
100 to 499	1.05 ea.
500 or more	1.00 ea.

Package bees available in limited quantity at nominal prices.

THOS. S. DAVIS

Route 7, Box 3914

Sacramento, Calif.

YELLOW ITALIAN BEES AND QUEENS

2-lb. bees with queen -----	\$2.75
3-lb. bees with queen -----	3.75
Queens untested at 80¢ each.	

We guarantee—Live delivery, health certificate, and satisfaction with each order.

OSCAR ARNOUVILLE

Hamburg, La.

Dadant's Starline Hybrid Queens



Reg. U.S.
Pat. Off.

Bred for Production
and Resistance to
AFB.

PACKAGE BEES with
either Starline or
Italian queens.

LOTT BEE COMPANY

Route 2 Baton Rouge, La.

HONEY WANTED

Bryant & Sawyer

2425 Hunter St., Los Angeles 21

High Quality Italian Package Bees and Queens Prolific and Productive

2-lb. Queens	2-lbs.	3-lbs.	4-lbs.	5-lbs.
1-24 -----	\$1.00	2.55	4.50	4.75
25 up -----	.90	2.90	3.65	4.40

Write for prices on larger orders.
Bees are shipped in new, neat, lightweight shipping cages by express collect or parcel post when prepaid by customer.

16% books your order, balance due 10 days before shipping date. State Health Certificate and Live Arrival Guaranteed. Please send your requirements in as soon as possible. Thank You.

CARLUS T. HARPER
NEW BROCKTON, ALABAMA

THRIFTY BEES

Three-Banded Italians
only

Prices on package bees are F.O.B. and include queen.

2 lb. packages in lots of 1 to 24, \$3.50; 25 to 99, \$3.25; 100 up, 3.00 each.

For larger packages add 90¢ for each additional pound of bees.

Queens post paid—1 to 24, \$1.10; 25 to 99, \$1.05; 100 up, \$1.00 each.

10% books order. Balance 10 days before shipment.

We guarantee live delivery and full weight packages of young THRIFTY Bees.

W. J. Forehand & Sons
Fort Deposit, Ala.
Brooders Since 1892

ROOT BEE SUPPLIES

HONEY PRODUCERS AND

PACKER'S SUPPLIES

Michigan Bee & Farm Supply

Box 7, 510 N. Cedar, Lansing, Michigan

Renew Your Subscription

American Bee Journal

How About Honey from Distinct Sources?

Professor Harvey Lovell, Department of Biology, University of Louisville, Louisville, Kentucky, is making a collection of honey from distinct sources. If you have honey that you are sure comes from an individual flower, you may be interested in helping Prof. Lovell in this interesting collection. Prof. Lovell writes "Apparently most beekeepers pour all their light honey in the same can and call it 'clover.' I prefer goldenrod or tupele honey. Any store featuring ten types of honey would sell much more than the store with only one kind." There you have it. We think he is right. If you are among the few who do sell by source, tell us what you think. Also send samples to Professor Lovell.

Sugar Tax Recoverable . . .

Each year we remind our readers that each pound of sugar fed to your bees bears a tax of a half cent a pound. Provisions in the law make it possible to recover this tax when sugar is fed to livestock, and honey bees fall into this category.

It is necessary to claim refund of this tax within a year after the purchase of the sugar. Three forms No. 843 are needed for this purpose and may be obtained from your nearest Collector of Internal Revenue or from the *American Bee Journal*. Two forms must be included in the claim, with the third copy retained for your files.

Paul Rudel . . .

Paul Rudel was laid to rest in the cemetery at Hemet, California on December 9, 1951. This kindly little German gentleman, who had lived to the ripe age of 85 years, was an example of thrift and industry which many of us would do well to emulate. I doubt if he had an enemy anywhere.

Paul Rudel asked no favors. For many years he was a resident of Riverside county and considering his scant equipment and resources, was a heavy producer of honey. He had an uncanny knack with the bees and could encourage them to production far beyond the average.

All who knew him will miss Paul Rudel. I wish there were more men like him in the world. Among my acquaintances of thousands of honey producers in the eleven western states there were none toward whom I bore greater respect.

Charles B. Justice, California



Reg. U.S.
Pat. Off.

START THE NEW YEAR RIGHT

Order packages and queens now and be assured of delivery just when you want them.

Dadant Starline Hybrids *** Our Regular Stock

No increase in prices, write for price list.

J. M. CUTTS & SONS

Chipley, Florida



Our Exclusive Features Are Designed for Practical Beekeepers



Stop and visit your neighborhood
Lewis-Dadant Beeware Dealer—
He will gladly explain the time
and money saving values.

G. B. LEWIS COMPANY

Albany 1, New York Lynchburg, Virginia
Chillicothe, Ohio Watertown, Wisconsin



• QUEENS—PACKAGE BEES FOR 1952 •

ESTABLISHED 1885

Maximum production is most easily assured with superior bees and queens. That's one way we try to help you make money. Superior bees and queens is our motto at all times. We like to have 50 per cent deposit and balance before shipping date. We believe this is fair to all—as we like to plan and ship the day you want shipment. Price scale:

Queens, any number \$1.00—Tested Queens \$2.00	
2-lb. package and queen	\$2.00 any number
3-lb. package and queen	4.00 any number

THE VICTOR APIARIES

Uvalde, Texas



**Middlesex County, Mass.
Waltham, March 29**

The Middlesex County Beekeepers Association will hold its next regular indoor meeting at the Waltham Field Experimental Station, March 29, 1952, starting at 6:30 P. M. with a hot buffet dinner. Members will start to make plans for the outdoor meetings to be held at the apiaries of members.

All beekeepers in the New England area are invited to see the 81st New England Spring Flower Show to be held March 9 through 15 at the Massachusetts Charitable Mechanics Building in Boston. The association committee has prepared an educational beekeeping exhibit.

John H. Furber, Sec'y-Treas.

**State Meeting
Nashville, Tenn., March 7**

The Tennessee State Beekeepers Association meeting will be held at

the Hermitage Hotel in Nashville on Friday, March 7. Beekeepers are urged to attend.

Tennessee Apiculture

**St. Clair Beekeepers Assoc.,
Belleville, Ill., March 5**

The next regular meeting will be held in the county highway building in Belleville on March 5 at 8 P. M.

Leiper & Hankammer,
Program Committee

**North Carolina Annual
Clinton, March 14**

North Carolina State Beekeepers' Association will hold its annual Spring Meeting at Clinton, N. C. on Friday, March 14 beginning with a business session at 10 a. m. There will be an interesting program of speakers including a lecture by W. A. Stephen, Extension Bee Specialist at

N. C. State College, on beekeeping practices in Europe. This will be illustrated with color slides made while attending the International Congress last summer. Beekeepers from North Carolina and neighboring states are cordially invited to attend.

Eugene B. Finch, Sec'y

**Delaware County Beekeepers
Muncie, Ind., April 4**

The Delaware County Beekeepers Association will hold its annual meeting at the Y.M.C.A. in Muncie on Friday, April 4, at 7:30 p. m. Guest speakers will be Dr. B. Elwood Montgomery of Purdue University and Gilbert Perigo of Indianapolis, secretary of the Indiana Beekeepers Association and chief bee inspector of Indiana. A cordial invitation is extended to anyone interested in beekeeping.

John O. Wingate, Pres.

**Dadant's Starline Hybrids
and
Italians**



Reg. U.S.
Pat. Off.

The new and better Hybrid, constantly improved, and I offer you the very latest development in them. They are truly the Bees of Tomorrow. Very gentle, hardy, best of honey getters and highly resistant to AFB. A pleasure to work with.

My own strain of Italians that I have been rearing for a quarter of a century with improvement always in mind. New blood is added every few years. They are tops in Italian stock. All queens of both races reared in strong, large nuclei, meaning well-developed queens.

I DO NOT BUY QUEENS FOR RESALE.

All queens prepaid Airmail if it will save time. Packages express collect or by mail. Send postage and Special handling, also 5c for insurance if by mail.

Queens each. 2 lbs. bees w.q. 3 lbs. bees w.q.
(Shipping wt. (Shipping wt.

	6 lbs.)	7 lbs.)
Italian --- \$1.20	\$3.50	\$4.25
Starline -- 1.45	3.75	4.50

**Order Early
to get shipping date reserved**

S. J. HEAD
Crossett, Ark.

NOW

is the time to

CHECK

your bee supplies and

ORDER

those you need early.

We have a full line of supplies, and of course the "LOTZ SECTION," no finer section made.

Write for prices.

AUGUST LOTZ COMPANY

Manufacturer & Dealer

Boyd - - - - - Wisconsin

Influence of Pollen Feeding on The Length of Life of the Bee

Experiments with 28 kinds of pollen have shown that pollens vary in their influence on the length of life of the bee and its physiological condition. They may be divided into three groups. The first group stimulates a strong development of the brood food glands, fat-body and ovaries of young honey bees and prolong the length of life of the bees. The second group has a similar but less effective influence, and the third has no such influence.

Pollen substitutes vary in their effectiveness, but none is biologically so effective as the pollens in the first group.

There is a close connection between the length of life and the physiological condition of the bee. The length of life is controlled mainly by the stores of pollen and by brood rearing, and contrary to previous assumptions, only to a lesser extent by the amount of work done by the bees during their activities as foragers.

(Summary by J. N. Tennent, Scotland, of the paper read by Dr. A. Maurizio, Liebefeld-Bern, Switzerland, at the International Congress.

Introduction of Queens . . .

The question of the introduction of queens is one of the very few things that really matter in the management of bees. By introduction is meant not merely getting every queen accepted but transferred to her permanent home in full possession of her unimpaired vigour and fecundity. After an experience extending over twenty years in which thousands of queens have been introduced or substituted, Bro. Adam claims that the acceptance of queens may now be regarded as infallible.

Colony odour has nothing to do with the acceptance or rejection of a queen. There is no scientific proof of the existence of colony odour and, if it does exist, it has no bearing on the success of queen introduction. The success of queen introduction depends only on her condition and behavior. Queens which have reached full maturity and are in laying condition may be introduced in utter disregard of the prerequisites hitherto considered essential for safe introduction.

(Summary by J. N. Tennent, Scotland, of the paper read by Rev. Bro. Adam, O.S.B., Buckfast, England, at the International Congress.



Anna Maurizio at work in her laboratory.



Left to right: W. B. Williams, England; Heinrich Zentser, Oberammergau; and Brother Adam, England, at Leamington Spa town hall. (Photo by Herman Menke)

HONEY BEESWAX SUPPLIES

SUPERIOR HONEY COMPANY

FOUNDED FOR THE BEEKEEPING INDUSTRY OF THE WESTERN UNITED STATES.

A MARKETING OUTLET FOR ALL TYPES OF YOUR HONEY.

A MARKETING OUTLET FOR YOUR BEESWAX.

A SOURCE FOR YOUR SUPPLIES AND EQUIPMENT.

We are in business to serve you.

Visit our plants.

Ogden, Utah; Idaho Falls, Idaho; Denver, Colorado; Los Angeles, California; Phoenix, Arizona; and our Wood Goods Mill in Madera, California.

Will you buy bees this Spring?

If so and especially if you intend to get Kelleys Island Hybrids place your order at once. The demand is great and we cannot guarantee to deliver Hybrids on short notice. However, we will do our best.

Buy your bees as you would seed for your farm or garden. The best is cheapest regardless of price. The queen is your bee seed.

PACKAGE BEES

Headed either by our regular strain queens or Kelleys Island Hybrids at the following prices:

	2-lb. with queen	3-lb. with queen
1 to 25	\$3.25	\$4.25
26 or more	3.00	4.00

"They Produce"

Club your orders and pick up by truck for substantial savings.

Satisfaction Guaranteed

ROSSMAN & LONG

P. O. Box 133

Moultrie, Ga.

PACKAGE BEES

"GULF BREEZE" QUEENS

We are offering you from one package to a TRUCK LOAD with our popular GULF BREEZE queens at our low prices. 10% more colonies to supply the growing demand.



Quantity

1-24

25 Up

Queens

\$1.10

1.00

PRICES for 1952

2-lb. Pkg.

W.Q.

\$3.25

3.00

3-lb. Pkg.

W.Q.

\$4.15

3.90

4-lb. Pkg.

W.Q.

\$5.15

4.90

BESSONET BEE COMPANY

Donaldsonville, La.

FLOWERS QUALITY ITALIANS:

THAT WILL STAND THE TEST FOR MONEY GATHERERS GENTLE, PROLIFIC

We wish to thank each and every one for the business you gave us last year. We are better prepared to serve you this year. Our motto is to serve you with the best young bees and queens money can buy. Ask our customers. State health certificate with each shipment, prompt live delivery guaranteed. We don't guarantee parcel post shipments. Shipped when wanted, but place your orders early, no orders too large or too small.

Packages with young laying queens F.O.B.

2-lb. package

\$2.75

4-lb. package

\$4.25

3-lb. package

\$3.50

5-lb. package

\$5.00

Extra queens mated (untested) \$1.00

FLOWERS BEE COMPANY

Jesup, Georgia, U.S.A.

PLANT'S THREE-BANDED ITALIANS

Productive, Gentle, Easy to Handle

Our package colonies are shaken every ten days to two weeks and all bees entering the packages are strained through an excluder. 90% or more are less than two weeks old. No drones. No stray queens.

We have never received a report of any Nosema in our bees.

Prompt shipment in light weight cages with health certificate attached.

All queens are young, laying properly, and first quality.

Safe arrival guaranteed by express, however we will ship by mail at buyer's risk.

Quantity

1 to 24

\$1.25

Queens

1.50

2-lb.

\$3.50

3-lb.

\$4.50

4-lb.

\$5.50

5-lb.

\$6.50

25 to 99

\$1.15

3-lb.

\$3.25

4-lb.

\$4.25

5-lb.

\$5.25

100 up

\$1.10

3-lb.

\$3.00

4-lb.

\$4.00

5-lb.

\$5.00

Each package has a young, laying queen.

W. E. PLANT

Hattiesburg

Route 2

Mississippi

Package Bees & Italian Queens

We are booking orders for 1952 only 30% with order, balance 10 days before shipping. We guarantee live delivery and health certificate of each package shipped.

2-lb. pkg. with queen

\$2.40

3-lb. pkg. with queen

\$3.20

4-lb. pkg. with queen

\$3.90

LOUIS GASPARD BEE FARM

Mesmer, Louisiana

GOOD ITALIAN QUEENS IN SEASON

WHITE PINE BEE FARMS
Rockton, Penna.

FRAME-GRIP—SEND NOW!

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PRICES:

Quantity	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	\$3.25	\$4.00	\$4.75	\$5.50
25 to 99	3.00	3.75	4.50	5.25
100 to 199	2.75	3.50	4.25	5.00

Untested Queens — 1 to 24 — \$1.15 ea.
25 to 99 — 1.10 ea.
100 to 199 — 1.00 ea.

Tested Queens — \$2.00 each.

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1952

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Write for our new catalog we expect to have available to all beekeepers about the first of February.

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Martz Apiaries
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**QUEENS, BEES,
PACKAGES**
CITRONELLE BEE CO.
Citronelle, Ala.
Write for prices.

Southern California's
Highest Production
ITALIAN QUEENS
1952 Prices

1 - 24 ----- \$1.20
25 - 99 ----- 1.10
100 - over ----- 1.00

Available about April 10
Order Early

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San Bernardino, Calif.

**A CONSTANT MARKET FOR
YOUR BEESWAX**
DADANT'S, Hamilton, Illinois

Dadant's Starline Hybrids

John Davis Italians



Produced in Little's Apiaries

	Queens		Packages		Queens		Packages	
	1-lb.	2-lb.	1-lb.	2-lb.	1-lb.	2-lb.	1-lb.	2-lb.
Reg. U.S.	\$1.45	\$2.75	\$4.50	\$8.45	1.30	2.50	1.20	2.40
Pat. Off.	1.35	2.65	4.40	8.35	1.10	2.30	1.00	2.20

Extra pounds—\$1.00 per pound, shipping starts about April 10
Packages will be shipped from our Alabama Apiaries
Address all correspondence to:

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PACKAGE BEES—ITALIAN BEES and QUEENS

On the same old basis—QUALITY, SERVICE, SATISFACTION

Live delivery guaranteed on all shipments. 10% deposit books any order.

2-lb. pkg. with queen	\$3.00
3-lb. pkg. with queen	4.00
4-lb. pkg. with queen	5.00
Queens	.90

Write for discount on orders over \$5 packages
Special prices to those who truck.

E. J. BORDELON APIARIES

Phone 2415 Moreauville

Box 33, Moreauville, Louisiana

ITALIAN BEES AND QUEENS

Book your order now. Same stock we use in our extensive northern Ohio and Indiana apiaries where we produce honey by the carloads. Satisfaction, live arrival guaranteed. Replacement or refund made promptly on receipt of bad order from Express agent.

March and April Prices

Lots of	3-lb.		5-lb.	
	1-lb.	2-lb.	1-lb.	2-lb.
1-24	\$4.00	\$4.75	\$5.50	\$6.25
25-99	3.75	4.50	5.25	6.00

MOREHEAD and SONS

Funston, Georgia

1952 CAROLINA'S

**Three-Banded Italian
BEES and QUEENS**

**Same High-Quality Merchandise and
Service**

1. PREPAID to your door
2. Shipped by any means of your choice
3. Queens clipped and painted for easy identification
4. Guaranteed safe arrival
5. Health Certificate with each shipment.

In spite of increased labor and material costs, our 1952 prices have NOT BEEN INCREASED.

1952 PRICES DELIVERED, PREPAID

	Queens	2-lb. & 3-lb. & 4-lb. & 5-lb. & each queen	2-lb. & 3-lb. & 4-lb. & 5-lb. & each queen	2-lb. & 3-lb. & 4-lb. & 5-lb. & each queen
1 - 24	\$1.10	\$4.00	\$5.00	\$6.00
25 - 99	1.00	3.75	4.70	5.65
100-499	.95	3.50	4.40	5.30

(for queenless packages deduct price of queen)

SHIPPED ANYWHERE IN UNITED STATES AND CANADA

Terms: One-third upon receipt of order, balance ten days before shipment.

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CAROLINA HONEY COMPANY
P. O. Box 188 Phone 4282
HAMPTON, SOUTH CAROLINA
(formerly Varnville)

Italian Queens - Package Bees

- Shipped prepaid via Parcel Post anywhere in U.S.A.
- Queens clipped and painted if desired.

We are booking orders at following prices:

2-lb. pkg. with young laying queen	\$3.50
3-lb. pkg. with young laying queen	4.40
Extra Queens	\$1.00

Full weight packages, young bees,
no drones.

- Truckers and those wishing express shipments please write, wire or phone for Prices F.O.B.

SOUTHLAND APIARIES

Ball, La., U.S.A.

Telephone 2,3293 Alexandria, La., Exchange

THE RICH HONEY FARMS

Jeanerette, La.

ITALIAN PACKAGE BEES

Heavy with bees, no drones. Shipped by parcel post or express. For parcel post shipment add 75c per package for postage.

QUEENS

The finest money can buy. Your choice of two outstanding breeds. Painted, clipped or airmail at no extra cost.



Dadant's Starline Hybrids

Worth much more than the price we are asking. You have years of selective breeding and testing in the ancestry of this strain. Queens produced by Rich's efficient methods from Dadant's special hybrid stock. Gentle, prolific, and resistant to AFB.

Rich's Leather Italian Stock

Gentle, uniform and good producers—will do their part in getting for you many supers of honey. Breeding stock selected for high production, non-swarming and gentleness. These bees are not resistant to AFB as are the Starline Hybrids. You will, however, find them very profitable.

PRICES

	Queens			Packages	
	Starline Queens	Regular Italian		3-lb.	4-lb.
1-24	\$1.45	\$1.20	2-lb.	\$4.50	\$5.50
25-99	1.35	1.10		4.25	5.25
100 up	1.25	1.00		4.00	5.00

When ordering packages with Starline queens add 25c per package.

Italian Package Bees & Queens

1 to 14 15 or more
2 lbs. with queen \$2.75 10%
3 lbs. with queen 3.50 Discount
4 lbs. with queen 4.25
Deduct \$1.00 for queenless packages.
Health certificate and live delivery guaranteed.

10% cash books your order.
DAIGREPONT APIARIES
Hessmer, La.

KOEHNEN'S Package Bees and Queens

For Quality and Service
KOEHNEN'S APIARIES
GLENN, CALIFORNIA

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ECONOMIZE!

Add a Johnson Dovetailing Machine to your shop equipment. Make those extra hives and supers during spare time at

1940 PRICES.

The excellent results with these machines are surprising.

Details on request.

CARL E. JOHNSON CO.

1557 GREGORY AVE.
LINCOLN PARK, MICH.

Package bees and queens accepted in payment.

G. B. Lewis Wooden Goods!

DADANT'S WORLD FAMOUS CRIMP.
WIRED FOUNDATION—Their 55 years' experience is your safeguard.
Catalogue on request.

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New Protector Glove

Plastic treated hands

Smooth, light color; reduce propolizing; soft cotton inside; washable; withstand acid, boiling water; will not peel or harden.

Wrist ventilators

Cool and comfortable

Sting resistant

Gloves and gauntlets, both difficult for stings to penetrate

Elbow ties

Elastic pull cords make elbow ties easy and quick to adjust.

Price — \$2.75 (large or small size)

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Hamilton, Ill.

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PACKAGE BEES and QUEENS

Two High Producing Strains of Bees:



Our Old Reliable 3-Banded Italians
and Dadant's Starline Hybrids.



Increasing demands indicate that these two High Standard strains of bees have gained Popular Recognition.

If you require one or a thousand packages write to us.

Volume Business enables us to give you this Complete Service at extremely reasonable prices.

Prices quoted below are for shipment by Express Collect.

For Parcel Post Delivery send extra as follows:

On 2-lb. pkgs. 95c ea.; 3-lb. pkgs. \$1.20 ea.; 4-lb. pkgs. \$1.40 ea.

	QUEENS		PACKAGES		
	Italians	Starlines	2-lb. WQ.	3-lb. WQ.	4-lb. WQ.
1-24	\$1.10	\$1.45	\$3.40	\$4.55	\$5.50
25-99	1.00	1.35	3.20	4.15	5.10
100 up	.95	1.30	3.00	3.90	4.85

Packages with Starline Queens add 35c per package.

(Queens Air Mailed, Clipped and Painted if desired, without charges)

GARON BEE CO.

Donaldsonville, La., U.S.A.

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John S. Shackelford
Rio Oso, California

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low prices—save up to 28%. Free valuable premiums on orders.

We work your beeswax and purchase all grades of honey. Write today and save BIG money.

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229 Walnut St., Cincinnati 2, Ohio
(since 1858)

ITALIAN QUEENS \$1.10 up to \$1

Larger lots write for prices. Queens from stock of 250 to 300 productions mated to drones of similar stock.

BEES—2-lb.—\$3.50 3-lb.—4.50

Will take white and water white honey as down payment or in full.

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ITALIAN QUEENS
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Nuclei and full colonies.

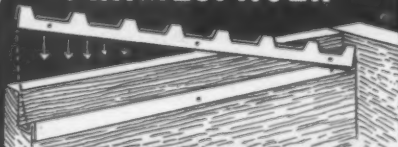
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BETTER BRED QUEENS THREE BANDED ITALIANS

You are the judge —

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Year after year of regular repeat customers has proved that our stock, service and responsibility are good. Everything is pointing to a good year. Let us book your order at the following prices:

	2-lb. pkg. with queen	3-lb. pkg. with queen
1-24	\$3.00	\$4.50
25-99	3.25	4.25
100 up	3.10	4.00

Queens, any quantity — \$1.00

CALVERT APIARIES, Calvert, Alabama

ITALIAN BEES AND QUEENS

	1 - 9	10 - 99	100 up
2 lb. pkg. with queen	\$2.75	\$2.65	\$2.50
3 lb. pkg. with queen	3.70	3.60	3.45
4 lb. pkg. with queen	4.50	4.40	4.30
Nice large queens	.85	.75	.70

We guarantee you nice large 1952 queens, and full weight packages. Order early for your preferred date.

MITCHELL'S APIARIES

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Use ABJ Labels — They Get Results

KNIGHT'S Three-Banded Leather Colored ITALIAN BEES AND QUEENS

The following prices include the Queen with each package:
 1 to 25 \$4.00 2 lb. pkg. \$5.00 3 lb. pkg. \$6.00 5 lb. pkg. \$7.00
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 50 and up 3.50 4.50 5.50 6.50

QUEENS \$1.25 EACH DURING MONTH OF APRIL

I guarantee a good full weight package with a Good Young Laying Queen, Safe Arrival and Your Satisfaction.
 I WILL APPRECIATE AN ORDER FROM YOU

JOHN T. KNIGHT

Hayneville, Ala.



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STARLINE QUEENS AND PACKAGE BEES
 Packages headed by Dadant's Starline Queens will produce more honey easier with less stinging and are resistant to American foulbrood. These are facts reported to us by users of this stock.

Quantity Queens 2 lbs. w/q 3 lbs. w/q extra bees \$1.00 per lb.
 1-24 \$1.45 \$3.75 \$4.75
 25-99 1.35 3.50 4.50
 100-up 1.25 3.25 4.25

For our standard 3-banded Italian stock deduct 25 cents per item.

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MACY ELECTRIC UNCAPPING KNIFE

No. 101 with Thermostat

No. 102 with Control Box

Price \$16.80

HUTCHISON MFG. CO., Licensed Mfr.

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CAUCASIAN bees in our testing apiaries in a North Central State more than doubled that state's average per colony honey crop in 1951. Our breeding queens for this season were selected for disease resistance, honey production, and gentleness. Their daughters will produce for you if properly handled.

Select untested queen	1-11	12-49	50 or more
2-lb. packages with select untested queen	\$1.30 each	\$1.20 each	\$1.10
3-lb. packages with select untested queen	\$3.75 each	\$3.65 each	\$3.50
4-lb. packages with select untested queen	\$4.75 each	\$4.55 each	\$4.50

Select untested queens after June first \$1.10 each, any number. Circular on request.

CAUCASIAN APIARIES

Castleberry, Ala.

BRIGHT ITALIAN QUEENS

That will give you beautiful, gentle bees, unexcelled as honey gatherers. Many years experience in rearing them. Supreme quality is what we try to give you. They will and must please you. Try them.
 1 or 100, \$1.00 each. Clipped if desired.

COTTON BELT APIARIES

Klondike, Texas

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If you are looking for CHEAP bees and queens do not write. If you are interested in QUALITY AND SERVICE . . .

— Write —

WEAVER APIARIES, Navasota, Tex.

ARE YOU LOSING BEESWAX?

We render old combs, cappings, and slumgum for beekeepers. Our steam wax presses get every available ounce of wax out of this material. Send for terms.

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Oconomowoc, Wis.

GASPARD'S ITALIAN QUEENS AND PACKAGE BEES

2-lb. pkg. with queen	\$2.70
3-lb. pkg. with queen	3.40
4-lb. pkg. with queen	4.10
5-lb. pkg. with queen	5.10
Queens — \$1.00	

10% discount on 100 pkgs. or more.
 Young queens and bees in every pkg. Live delivery guaranteed and health certificate with each shipment.

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Truck loads a specialty.
 Nuclei made to order. Italian queens, any number at any time.

EUGENE WALKER

Route No. 2 — Box 307
 Live Oak, Calif. — Phone 5584

Crop and Market

by M. G. Dadant

Honey on Hand

Throughout the nation, most reports indicate that there is not over 30 per cent of the 1951 crop on hand, and most sources report a smaller amount than that, with the government reporting an average of 28 per cent in producers' hands in mid-December. Many beekeepers do not have enough honey to fill local orders. Probably the only exception is in Florida and Georgia where there is some excess honey left, but much of it is moving into foreign channels.

In the Canadian provinces, Quebec has little honey but Ontario's heavy crop has not all been sold. Some reports in Saskatchewan show a considerable quantity still on hand.

On the whole, the amount of honey still remaining is apparently much less than a year ago and both amber and light stocks are equally well disposed of.

WILL Honey Move?

There is not much doubt that all stocks of honey will move ahead of the new crop and the situation will be good for the new marketing year. Florida anticipates moving most of its excess and in Ontario the "excess baggage" will apparently not be as much as it was a year ago.

Moisture

The writer has been preparing these crop pages for many years, but does not recall any year which approached the present universal report on amount of moisture available. Practically all reports are of more moisture than usual, and in some cases excess moisture as witnessed by the Ohio floods. This con-

dition has been accentuated by the fact that in the southern sections at least the ground was not frozen and much of the early moisture has penetrated. In the mountainous sections snows have filled the mountain passes and prospects for irrigation this summer seem favorable. The west coast has had excessive rainfall and except for some parts of southern California conditions are above usual. The only places reporting drought are eastern Colorado, western Oklahoma, Texas, and New Mexico. Long range reports indicate that these sections may have moisture to alleviate the situation.

Honey Plants

Plants which went into winter quarters with a fair amount of moisture, are apparently coming out in fine condition. This applies to both the east coast and the legumes of central areas, although there has been some freezing and thawing, causing heaving of clovers in some places. There is no doubt that moisture conditions, together with satisfactory honey plant conditions, will make good possibilities.

On the west coast the seasons for the past few years have been far below normal, but this year California is coming back, and with anything like an even break from now on, there should be yields from the mountain plants which have been missing for the past three or four years. Since California honey goes to market before that of other sections, the general tone of the future

honey market may be indicated by what happens to the California crop. At least this was true before government honey programs became effective.

In the south central area of Arkansas and in Texas, spring plantings of clover have not yet been indicated, but it is apparent that there will not be the wholesale planting of cotton there was a year ago, and with favorable weather this spring both vetch and clover will be in larger supply than in 1951. Throughout the South, the tendency is toward legumes, and vetch, crimson clover and Hubam are increasing as well as white Dutch clover. Millions of Lespedeza bicolor shrubs are being planted in waste places to stop erosion as well as for wild life food.

Condition of Bees

Here again we have an almost universally favorable report of bees having had flights practically every three weeks during the winter. Warm spells during mid-February have given impetus to brood rearing in the southern areas. We would issue a word of warning on condition of colonies. With the favorable late winter inducing brood rearing, and the fact that in many sections the fall crop did not "plug the brood chambers" as it sometimes does, there may be possibilities of starvation. Already some of our reporters indicate the necessity for feeding as early as possible because of dwindling stores.

All in all, conditions look satisfactory with the 1951 crop so nearly gone, honey plant and moisture conditions satisfactory, and bees in at least average condition.

Honey Wanted— Cars and less than car. Top Prices.
C. W. Appleby Co., Oconomowoc, Wis.

SIoux HONEY is the place to get your labor saving equipment.



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BOGENSCHUTZ UNCAPPING MACHINE

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Box 1107 Sioux City, Iowa

The Market Place . . .

BEES AND QUEENS

CAUCASIAN BEES—2-lb. pkg. \$3.00; 3-lb. pkg. \$4.00. Queens \$1.00 each. Tillery Brothers, Greenville, Ala.

YELLOW ITALIAN QUEENS—Package bees. Satisfaction guaranteed. O. E. Brown, Route 1, Asheboro, N. C.

NORTHERN CALIFORNIA—30 years success. Italian and Caucasian queens. Package bees, nucs—100 and up. M. E. Baker, Rt. No. 1, Gridley, Calif.

THE NORMA ROY APIARY—Italian bees with untested queen. 5 pounds with queen \$3.50; 4 pounds with queen \$4.00; queenless packages, deduct 75c from above prices. Book your order now; no down payment required. Live delivery and health certificate. Norma E. Roy & Son, Hessermer, Louisiana.

CARNIOLAN QUEEN BEES—Warranted with untested queen. 5 pounds with queen \$3.50; 4 pounds with queen \$4.00; queenless packages, deduct 75c from above prices. Book your order now; no down payment required. Live delivery and health certificate. Norma E. Roy & Son, Hessermer, Louisiana.

DOES EXPERIENCE AND KNOW HOW mean anything to you? Green's profit producing queens are backed by 25 years of breeding better queens and shipping them to you when you want them. Price—90c each; after June first, 50c each. D. P. Green, Rt. No. 2, Deland, Fla. Telephone 512M.

DARK ITALIANS bred for heavy production. 3-lb. packages with young queens \$3.75; queens \$1.00. Henry Loehr, Caldwell, Texas.

CAUCASIAN BEES AND QUEENS—Extra good workers and very gentle. 2-lb. with queen \$4.00; 3-lb. with queen \$5.00. Select untested queens, 1 to 25, \$1.20; 25 to 50, \$1.10; 50 up, \$1.00 each. All orders given special attention. Black River Apiaries, Elliott Curtis, Mgr., Graham, North Carolina.

GRAY CAUCASIAN QUEENS—Guaranteed pure mating. My queens do not produce any bees that show yellow. I have been fire watchman for a logging company 40 miles back in the mountains for four years and have not seen a honey bee so far only what I have taken up there. 35 years a beekeeper. Price is \$5.00 per queen, safe arrival guaranteed. No disease. J. E. Mitts, Myrtle Creek, Oregon.

WILL FILL YOUR CAGES with certified Italians 50 cents pound after May fifteenth. Write for other package prices. A. V. Dowling, Valdosta, Georgia.

NUCLEI AND PACKAGES delivered by truck in New York or any eastern state. Nuclei \$5.50; 3-lb. package with queen \$4.00. C. D. O'Neill, Haines City, Florida.

YANCEY HUSTLERS—Packages and queens—ready April 1st. Three bands Italians, bred for business. Overweight packages, queens spring reared under ideal conditions, all guaranteed to please. 2-lb. pkg. with queen \$3.50; 25 or more at \$3.25 each; 50 or more at \$3.00 each. For 3-lb. packages add \$1.00 to above prices. Caney Valley Apiaries, Bay City, Texas.

THREE Banded ITALIAN bees and queens, best of quality. 2-lb. with queen \$4.00; 3-lb. with queen \$5.00. Select untested queens, 1 to 25, \$1.20; 25 to 50, \$1.10; 50 up, \$1.00. Write for prices on larger orders. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, North Carolina.

TRIPHON'S QUALITY AND SERVICE—Again we are ready to serve our many customers. Place order and we will do the work 30 years' experience, well qualified. Financially guaranteed. Triphon Bros. Co., 569—34th St., Sacramento, Calif.

BRIGHT 3-BAND ITALIAN bees and queens. Orange Bee Co., Eland, N. C.

GOLDEN ITALIAN BEES AND QUEENS—very yellow and gentle to work with. 2-lb. with queen \$4.00; 3-lb. with queen \$5.00. Select untested queens, 1 to 25, \$1.20; 25 to 50, \$1.10; 50 up, \$1.00. Satisfaction guaranteed. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, North Carolina.

ITALIAN QUEENS \$1.00 each; Carniolans \$1.25; Caucasian \$1.10. All queens by Air Mail. Walter D. Leverette, Box 364, Ft. Pierce, Florida.

FOR SALE

SACRIFICING at half price or best offer. Complete bee business at Bancroft, Idaho. Includes home, shop, extracting and honey packaging equipment and market. Good bee locations, equipment, etc. for 500 colonies. Other values worth over \$25,000—sell for \$12,500 or best offers. Earnest Galloway, 123 West 6 South, Salt Lake City, Utah.

TIN HONEY PAILS—5-lb., \$7.50 per 100. Also glass jars. Longfellow Bros., Hallowell, Maine.

FOR SALE—400 units consisting of bottom board, 10-frame standard hive body with drawn combs, wood cover, feeder bottle, entrance cleat, queen excluder, 1 9-frame standard super, 2 9-frame shallow supers all with drawn combs. No disease. \$10.00 each unit, 10 or more units at one time. No delivery. Robert E. Denny, Roseau, Minn.

FOR SALE—4-frame extractor \$25.00. 2-gal. copper steam generator \$3.50. Kelley No. 19 capping melter with wax separator \$10.00. Steam knife \$5.00. Robert Welters, Melrose, Minn.

FOR SALE—Twenty colonies Italians, 100 full-depth bodies with extracting combs. All 10-frame. Radial Extractor, 12 frame. Two 1800 lb. storage tanks, etc. Alf. Hansen, 5002 No. 23 St., Omaha, Nebr.

135 two- and three-story colonies, equipment for 350, 20-fr. extractor, tanks, etc. No disease. Locations and established market included. Other interests reason for sale. E. Crawford, 1218 N. Victoria, St. Paul, Minn.

75 to 95 colonies, each with extra super of honey last fall. Home yard state inspected last fall; outyard inspected this spring. Four frame reversible Root extractor, never uncrated. C. L. Young, Albia, Iowa.

500 hives, complete equipment, honey house and truck. Health certificate for 1948. \$650.00, \$280 cash. E. J. Green, Box 20, Westlock, Alberta, Canada.

FOR SALE—Several 25 pound cartons Dand's crimp wired foundation for standard Hoffman frames. Special price. Robert Denny, Roseau, Minn.

THIRTY two-story colonies bees, practically new. Selling account of age. Write for price. S. B. Johnston, 536 Patterson Ave., Glendale 3, Calif.

FOR SALE—Large quantity Root supers and frames, both K.D. and assembled, never used. Also all kinds used materials. Robert A. Cavin, Rt. 2, Blairstown, N. J.

FOR SALE—Ninety modern hives and equipment, whole or in part. Lockard, Harmon, New York.

FOR SALE—2 Root Buckeye 8-frame extractors. Perfect condition. Reasonably priced. Stahlman Apiaries, Buhl, Idaho.

25 to 30 two- and three-story hives Italian bees. Well located near Mason, Ohio. Three yards, one on W.L.W. Radio Farm. \$10.00 per hive, sell one or all. L. O. Marshall, 2514 May St., Cincinnati, Ohio.

FOR SALE—New and used bee equipment. 300 section supers, complete including 80-lb. thin surplus foundation, 450 split sections and wire, about 100 used hives complete with frames and 250 lbs. new crimp-wired foundation. Ronald Boyd, Bassett, Iowa.

FOR SALE—Two eight-frame Superior Lifetime extractors, good shape, twelve-inch baskets. Schreiber Honey Company, Gooding, Idaho.

FOURTEEN MODIFIED DADANT hives with supers. No bees. Will sell cheap. Robert Lausch, Scott City, Kansas.

150 double body colonies. Plenty of extra supers. New 20-frame Root extractor. 2 100-lb. honey heaters, tanks, electric planes. Health certificate. F. A. Folk, Polo, Illinois.

HONEY and BEESWAX WANTED

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Michigan.

WANTED—Extracted honey, white or light amber, in 60's. State price in first letter. Ed. Heidt, 1004 W. Washington St., Bloomington, Illinois.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1348 Produce Street, Los Angeles, California.

WANTED—All grades comb and extracted honey, large or small amounts. Quote price in first letter. Mail sample. King Honey Co., 4308-10-12 E. Truman Road, Kansas City, Mo.

WRITE FOR SHIPPING TAGS and current quotations on rendered beeswax. Any amount from one pound up bought. If you have 25 pounds or more, save 25% by letting us work it into foundation for you. Walter T. Kelley Co., Paducah, Kentucky.

CARLOADS or less of honey and wax. Send sample and price. Alexander Co., 819 Reynolds, Toledo, Ohio.

COMB AND EXTRACTED HONEY wanted. Truck or carload lots. Contact Victor Honey Farms, Josephine, Texas.

WANTED—Comb to cut and white grades. Mail samples. Cole Honey Co., 4460 Piedmont Ave., Oakland, California.

HONEY FOR SALE

NEW CROP OF HONEY shipped daily from producer in Florida. Pure orange blossom, 5-lb. pail \$2.25. Pure Florida cut comb honey, 5-lb. pail \$2.75. No C.O.D. orders; all shipments prepaid. E. R. Raley, Box 1610, Daytona Beach, Florida.

ANY GRADE—any amount. Alexander Company, 819 Reynolds, Toledo, Ohio.

ORANGE, PALMETTO AND MANGROVE honey in new bottles. Peter W. Bowinski, Ft. Pierce, Florida.

FANCY CLOVER HONEY 15c per pound in 60-lb. cans. Please order from ad. Ohmert Bee Farms, Dubuque, Iowa.

CLOVER HONEY in new cans. Case or truckloads. Sample 25c. Harry C. Kirk, Armstrong, Iowa.

200 cases comb, 24 sections, good quality, condition, weights. Sweet clover-buckwheat, also goldenrod. S. T. Fish & Co., Inc., 4121 So. Aberdeen St., Chicago 8, Ill.

CLOSING Out white clover honey packed new sixties. No reasonable offer refused. Andrew Mahay, Johnstown, New York.

CLOVER EXTRACTED HONEY in sixties. Ralph Gamber, 910 State, Lancaster, Pennsylvania.

FOR SALE—100 sixty pound cans clover honey. Harry Canfield, Dallas City, Ill.

1952 Sam E. Moore 1952

NO PACKAGES—JUST QUEENS

Do You Want More Personally Raised

TOP QUALITY ITALIAN QUEENS?

1-10	\$1.25
11-49	1.15
50-99	1.10
100-499	1.05
500 or more	1.00

Prices postpaid by Air Mail.

All Queens raised in large 4 frame nuclei.

SAM E. MOORE

2436 North St. Redding, Calif.
Phone 293 R

HONEY, white clover, 16c per lb. 5 sixties or more 15c. Satisfaction guaranteed. Lose Brothers, 206 E. Jefferson, Louisville, Ky.

HONEY—12 quarts to case, \$12.00. Excellent quality. S. A. Boone, Kenansville, N. C.

SUPPLIES

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

THE BIGGEST BEE SUPPLY CATALOGUE PUBLISHED (64 pages) free for the asking. Big factory manufacturing a complete line of wooden goods, comb foundation, metal goods, veils and gloves, carloads in stock, daily shipments, save 20%. WALTER S. KILLEY CO., PADUCAH, KENTUCKY.

SOUTHERN CALIFORNIA HEADQUARTERS for Bee Supplies. Make our facilities your "Trading Post." Complete stocks. See our Bulletin Board for Budget Bargains. The Diamond Match Company, 1300 Produce St., Los Angeles 21, Calif.

FOR CHRYSLER all steel electric welded queen excluders in the U.S.A. write to: Prairie View Honey Co., 12005—12th St., Detroit 6, Michigan. Ask for circular E 2.

BEE SUPPLIES—Tin packages, 10 sizes glass jars, paper shipping supplies, window cartons and other items. Roscoe F. Wixson, Dundee, N. Y.

THE ONLY COMB FOUNDATION PLANT in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, Rt. No. 3, Auburn, New York.

BEE SUPPLIES—Catalogue free. Hodgson Bee Supplies Ltd., 545 13th Ave., New Westminster, B.C., Canada.

BUILD UP YOUR BEES with heat for the honeyflow. Write for information and get the benefit from my experiments. George Adelhardt, Libertyville, Ill.

PURE POLLEN—Collected from disease free colonies. Stimulate early spring brood rearing. One pound plus soybean flour and syrup makes 15 pounds of mixture. Pound \$1.25; 3 pounds \$2.25; 4½ pounds \$4.90; 9 pounds \$9.25 postpaid. Feeding instructions enclosed. University of Arkansas, Fruit and Truck Branch Experiment Station, Hope, Arkansas.

FOR SALE—Filter presses, filter paper of various types for filtering honey. The Cellulo Co., Sandusky, Ohio.

YOUR WAX WORKED into quality medium brood foundation for 23c pound; 100 pounds \$18.00. Medium brood foundation for sale at 85c pound. Fred Peterson, Alden, Iowa.

WANTED

WANTED—125 3-pound package bees only for May first. Will trade for Dadant's Wired Foundation. Robert Denny, Roseau, Minn.

WANTED TO RENT—500 to 700 colonies of bees. John Pfeiffer, 438 Idaho Ave., Lovell, Wyoming.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

WANTED—Copy of Dr. Bodog F. Beck's book, "Bee Venom Therapy," for a collector. He is willing to pay \$6.00 for the book. If interested, mail to American Bee Journal, Hamilton, Illinois.

POSITION AND HELP WANTED

WANTED—Capable experienced beekeeper. Must give references. Living quarters furnished. Good salary and permanent position. Farr, 4551 Paddock Road, Bond Hill, Cincinnati, Ohio.

WANTED—One experienced and one inexperienced beekeeper for coming season in the North, starting March. Bill Sahlie, Cordell Apt. 7, Mission, Texas.

WANTED—Experienced beekeeper for honey production in Midwest. Good salary, share basis, or both. Must be able-bodied, active, good truck driver, no drafts. Address Box 100, American Bee Journal.

THREE MEN—Experienced or inexperienced, to work in our apiaries and packing plant. Good wages, bonus, other advantages to offer. Schultz Honey Farms, Ripon, Wisconsin.

ONE MORE MAN in bee business. Good wages. Excellent opportunity. M. E. Ballard, Roxbury, N. Y.

WANTED—Two experienced beekeepers for honey operations, starting March 15. References. Fred A. Robinson, 503—5th Street South, Nampa, Idaho.

WANTED—Apiculturist for ranch in Hawaiian Islands, term contract and good advancement for right party. Transportation and ranch house furnished for family, other advantages. Reply fully to Box 2, c/o American Bee Journal.

SEEDS AND TREES

SEEDS OF HONEY PLANTS—Improve bee pasture. Special: 24 varieties (seed) for \$2.75. UNUSUAL NECTAR PERENNIALS, plants for quick results: 56 plants (6 varieties) \$5.00. Postpaid. See free descriptive catalogue. Pellett Gardens, Atlantic, Iowa.

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

DON'T LOOK ON THE OPPOSITE SIDE OF THIS PAGE

There have been some changes made.

SAM E. MOORE

For NECTAR—For SHADE—One Ever-flowering Locust (*Robinia semperflorosa*) tree 5 foot, one Moss Locust—rose pink, flowering (*Robinia hispida*) bush 2 foot, one Thornless Honey Locust (*Gleditsia triacanthos inermis*) 18 inch, all for \$2.95, or three of each for \$7.95 postpaid. Prompt orders from this ad get extra premium. Eighty variety Honey Plant & Tree catalog free. Est. 1910. Nicollet County Nursery, St. Peter, Minnesota.

EVERFLOWERING LOCUST (*Robinia semperflorosa*) strong 4-5 ft. trees, each \$2.75; 3 for \$8.50; 12 for \$30.50. VITEX INCISA NEGUNDO trees, 3 for \$2.50. American Bittersweet, strong 2-3 ft., 6 \$2.00. All postpaid. Free honey plant catalogue. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

"HONEY IN THE COME" by Carl E. Killian. Let this book help you make a profit from your bees. Price postpaid \$3.00. Killian & Sons Apiaries, Paris, Ill.

RANCH MAGAZINE—Do you find it difficult to secure information about sheep and sheep ranching methods? The SHEEP and GOAT RAISER reaches more sheepsman with more information of range sheep than any magazine published. Subscription \$1.00. Hotel Cactus, San Angelo, Texas.

NEED EXTRA MONEY? Show your friends Wonderful Regal line of All-Occasion Greeting Cards. Over 100 beautiful assortments to choose from. Also Exclusive Stationery unobtainable elsewhere. No experience necessary. Your profit up to 100% plus bonus. Write for free samples. Sales kit on approval. Regal Greeting Card Co., Dept. 102, Ferndale, Michigan.

FARM EQUIPMENT

FREE—Montgomery Ward's 144-page Farm Equipment Catalog. Contains full line of modern beekeeping supplies for profitable honey production and plant pollination. Hives, frames, supers, foundation, accessory tools, extractors, marketing cans, jars. Also certified healthy, gentle 3-banded Italian bees and purebred queens. Catalog contains hundreds of other items, including fence, poultry, dairy and stock supplies, garden tractors, grain handling equipment, hand and power sprayers, insecticides. Write today for this up-to-date, money-saving Catalog to Montgomery Ward, Dept. FR-52, Chicago 7, Illinois.

Dadant's for Honey Labels

DADANT'S STARLINE HYBRID QUEENS

Production and Resistance Combined
BRED IN ISOLATED YARDS



Reg. U.S. Pat. Off.

Starline Queens 1.34 25.99 100 up
Italian 1.15 21.95 1.00

JOHN G. MILLER, 723 6th St., Corpus Christi, Texas



Italian Bees and Young Queens

Book your orders now. Full Weight, Health Certificate, and live arrival guaranteed. VIA EXPRESS.

2-lb. pkg. with queens \$2.50
2-lb. pkg. with queens 3.40
Queens90

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Shannon, Miss.

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A Famous Strain of Yellow Italians

— Produced by —

THE WORLD'S MOST MODERN BEE BREEDING ESTABLISHMENT.

— 1951 and 1952 PRICES —

Lot	Queens	2 Lbs.	3 Lbs.	4 Lbs.	5 Lbs.
1-5	\$1.35	\$3.55	\$4.50	\$5.45	\$6.40
5-15	1.30	3.50	4.45	5.40	6.30
15-25	1.20	3.40	4.35	5.25	6.20
25-100	1.15	3.30	4.25	5.20	6.10
100 up	1.05	3.20	4.15	5.05	6.00

Select Tested Queens — Before June 1, \$10.00. After June 1, \$5.00.

Above package price includes queen. Queenless packages, subtract \$1.05 from the price of package with queen. All queens are airmail, postpaid, but package bees are F.O.B. shipping point and are shipped Express collect. It is preferable to ship package bees by Railway Express. However, they can be mailed and in that event, customers should include postage.

TERMS: Small orders, cash in full. Large orders, 20 per cent deposit, balance to be received two weeks before shipping date. U. S. Funds. A 10 per cent discount is allowed on package bees if shipments are to be made after May 20th. A 20 per cent discount is allowed on queens if shipment is to be made after May 20th. And a 25 per cent discount is allowed on queens to be shipped after June 1st.

THE DANIELS APIARIES, Picayune, Miss.

Attention, Please!



Bees . . for pleasure and profit

This covers Mr. Beekeeper, large or small; Mr. Farmer, who grows seed crops which need bees for pollination to ensure more and better seed production (when seed crops are pollinated by bees); and Mr. Fruit-grower, who needs bees for pollination in 1952. We warn with an important message to one and all: If you have tried and failed, you must try again. Don't give up the ship. We haven't, and both success and pleasure have come our way.

DON'T let your empty equipment lie idle for 1952 Mr. Beekeeper, whether one hive or a hundred, at the price of package bees and queens. For seed crops, farmers need bees for more seed production per acre. Fruit growers need bees for pollination. Our nearest seed-cleaning plant reports—No bees, no seed crop—same for fruit.

WE HAVE TO OFFER YOU—YOUNG HIGHEST PRIME QUALITY PACKAGE BEES AND QUEENS
(Liberal overweight) (Baby Bees, No Drones)

THE IMPROVED STRAIN of three-banded Italians, backed by over 30 years' careful selecting, breeding, and shipping to all points in U. S. A. and Canada. Each year our breeding and mating stock is carefully picked and tested out for the coming season from hundreds of best by test colonies, which gives you benefit of each season's improvement when buying from us.

We are booking orders for the season of 1952, plan your requirements for this season and place your orders early. We are working each day from now on to fill your orders promptly on the day you want them with the very best of **QUALITY BY TEST**. Let us know your 1952 requirements. We guarantee to please you in every respect or money cheerfully refunded. Shipment guaranteed on date you desire. We can take care of your rush orders from March 15th on. No disease. Health certificate with each shipment.

1952 LOW PRICES

Orders booked 25% down payment, to confirm. Balance due 10 days before shipment.

	Queens	2-lb. with queen	3-lb. with queen	4-lb. with queen
1 - 24	\$1.00	\$3.25	\$4.00	\$4.50
25 - 99	.90	3.00	3.80	4.25
100 - up	.85	2.75	3.50	4.00

H. A. FARMER APIARIES

COTTONWOOD, ALA.

Telegraph and Express Office, DOTHAN, ALA.

YORK'S

Package Bees and Queens for 1952

Quality Bred Italians
*The Strain Preferred by Leading
Honey Producers*

Package Bees with Queens

Quantity	1 to 24	25 to 99	100 up
2-lb. Packages	\$3.50 each	\$3.25 each	\$3.00 each
3-lb. Packages	4.50 each	4.25 each	4.00 each
4-lb. Packages	5.50 each	5.25 each	5.00 each
5-lb. Packages	6.50 each	6.25 each	6.00 each
Queens	1.10 each	1.05 each	1.00 each

Queenless Pkgs., deduct \$1.00 per package.
Tested queens \$1.00 extra.

Place orders now for shipping dates wanted. Shipment by express, parcel post, and truck.

YORK BEE COMPANY
Jesup, Georgia
(The Universal Apiaries)

LEAHYS OFFER YOU

- ★ Quality Bee Hives
- ★ Prompt Shipment
- ★ Over 60 Years Fair Dealings
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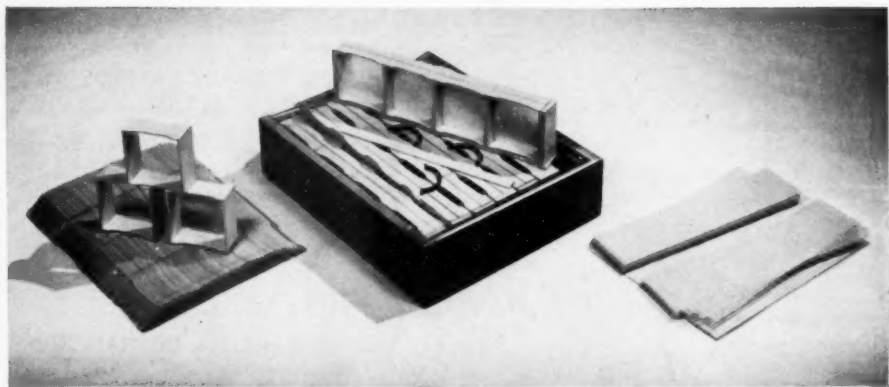
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Are You Planning on Producing Comb Honey This Year?



If you are you will want the best equipment . . .

Root Sections

are made of select basswood with round V-groove to insure good folding.

Root Section Supers

are accurately made for $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$ or $4 \times 5 \times 1\frac{3}{8}$ sections. Easily assembled for use.

Root Super Foundation

is made of light cappings. This thin foundation assures you a first-class comb.

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produced the world's record crop. More space for bee movement.

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Medina, Ohio